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ABSTRACT

This manual provides electrical and electronic engineers with an introduction to online information retrieval as implemented on the DIALOG information retrieval system. Sections cover: (1) the development of computerized information retrieval; (2) its advantages; (3) the equipment needed, DIALOG hours of availability, methods of access, and cost factors; (4) the process of interactive online information searching and the stages in a computer search; (5) techniques for searching including correcting operator errors, logging on, preparing a search, selecting databases, entering a search, displaying the results, using the expand command, using truncation, broadening and narrowing a search, displaying a search history, selecting previous sets, full-text searching, transferring searches from database to database, and logging off; (6) the author search; (7) the corporate source search; and (8) cited reference searches using "Science Citation Index (SCISEARCH)." Examples of online commands and records are provided throughout the manual. Also provided are alphabetical and subject lists of DIALOG databases; diagrams and checklists for the search process; sample subject, free-text, multi-database, and corporate source searches; and copies of the DIALOG bluesheets for six databases of importance to electrical and electronic engineers. (ESR)

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DIALOG FOR ELECTRICAL ENGINEERS

NANCY FJÄLLBRANT

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Göteborg 1982

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Foreword

The aim of this manual is to provide electrical and electronic engineers with:

- an introduction to computerized information retrieval and its advantages
- awareness of the DIALOG information system and its databases
- knowledge of techniques for accessing the DIALOG system
- knowledge of basic commands for subject searching, author searches and cited reference searchs.

It is hoped that the manual will serve as a useful tool for 'hands on' user practice in searching for information via the computer. The author would like to express her thanks to Charles Bourne for his advice, help and encouragement and to the DIALOG Information Retrieval Service for permission to reprint material from DIALOG Documentation including the Pocket Guide to DIALOG, the DIALOG Lab Workbook and the DIALOG Database Catalogue.

1. AN INTRODUCTION TO COMPUTERIZED INFORMATION RETRIEVAL

1.1 The Growth of Information

During the last twenty-five years there has been a rapid growth in published information, particularly in the sciences, technology and medicine - the information explosion. More and more people are carrying out research and publishing their results. This makes it harder to find the specific information that you require out of the mass of available documents. The growth in quantity of information has, however, led to the development of more efficient storage and retrieval systems.

It is now possible to search for information with the aid of computers. Information which is stored in computerized form can be accessed from a terminal via the telecommunication network (see Fig 1). This computerized information retrieval is based on an interactive dialogue between the user and the information stored in the computer.

Usually, the online computer services are connected to the user's terminal via the public telephone system. This is done by means of acoustic or electrical modems (signal converters) between the terminal equipment and the telephone system.

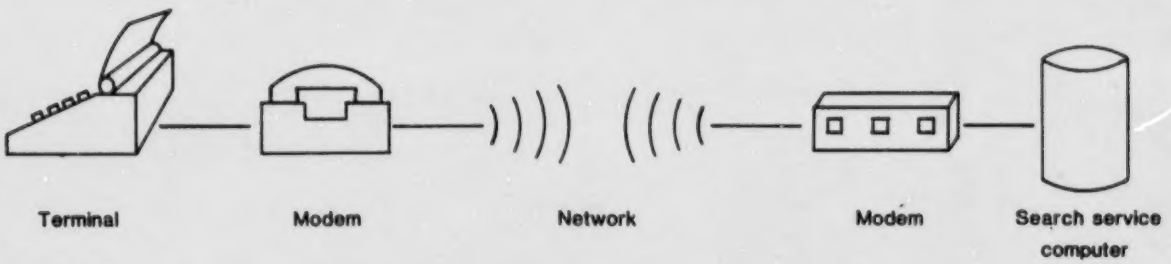


Fig 1. Diagram showing transmission of a message from user to search service computer

1.2 The development of computerized information retrieval

The growth in published information in primary publications such as journal articles, reports, conference proceedings etc. led to the production of secondary publications such as abstracts and indexes, for example Engineering Index and Electrical and Electronics Abstracts. These abstract and index publications are discipline or subject oriented. They contain information from many primary publications within a given subject field, and structure this so as to make it easily accessible. The use of secondary publications makes information retrieval easier and more efficient. The enormous increase in published information in the 1960s resulted in long time delays between the publication of the primary documents and their treatment in the appropriate secondary publications. Computers began to be used to speed up the printing of the secondary publications. The bibliographic references to primary documents were stored in a computer memory in the form of a file called a database. This stored information could then be used either for printing an abstract or index publication or for direct information retrieval via a terminal (see Fig 2).

Fig 2 From Document to Secondary Publication/Database

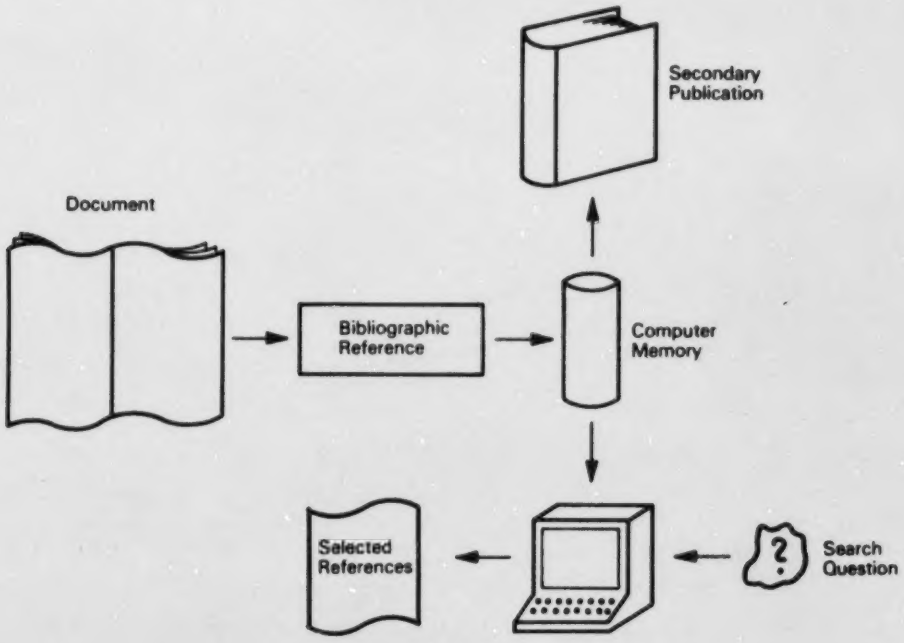


Fig 2. From Document to Secondary Publication/Database

2. THE ADVANTAGES OF COMPUTERIZED INFORMATION RETRIEVAL

Computerized information retrieval has several advantages over manual methods for literature searching.

(1) The searcher saves time.

(2) Information stored in a database is usually available more quickly via the terminal than via the printed publication.

(3) It is possible to search for information in several subject areas during the same search - for example, information on environmental pollution can be searched for in databases covering biology, engineering and chemistry (see Fig 3).

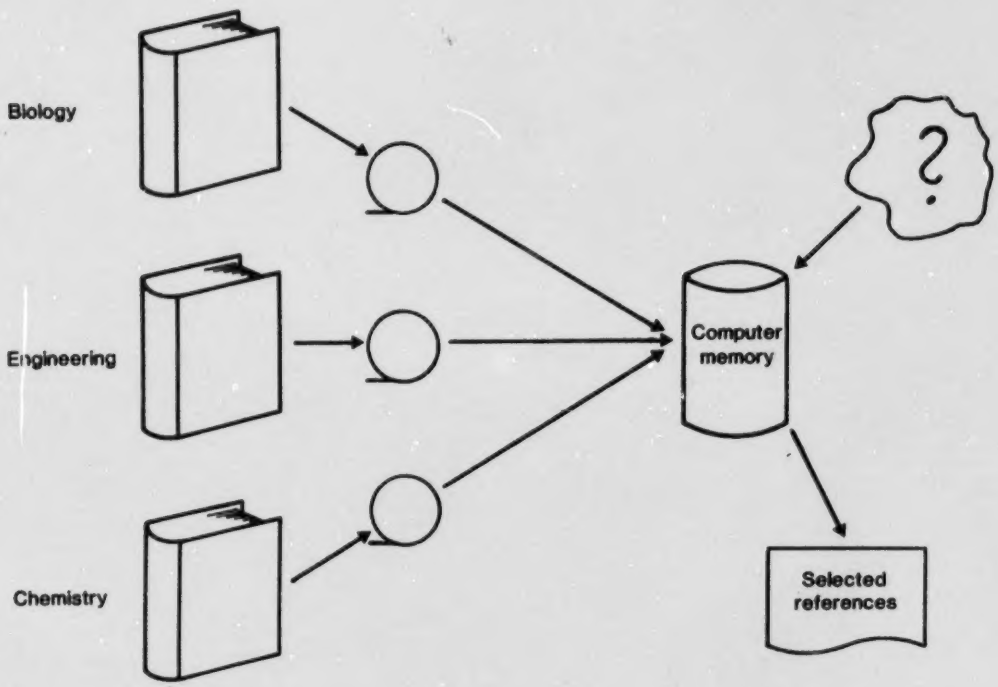
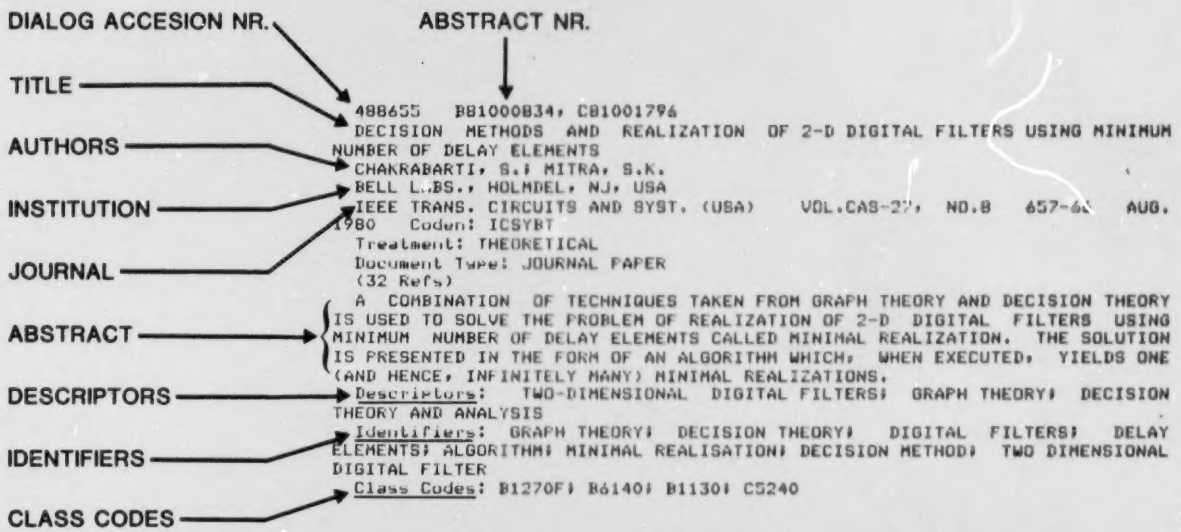


Fig 3. Searching for information from several disciplines

(4) It is possible to carry out a more detailed search with the help of the computer than by manual methods. In the printed publications, it is usually only possible to search under subject headings or authors, whereas the computerized system permits many more search entries such as institution, title of journal, classification code, keywords or descriptors and words included in the title/abstract. Every unit of information which has been stored in the computer is potentially searchable (see Fig 4).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DECISION METHODS AND REALIZATION OF 2-D DIGITAL FILTERS USING MINIMUM NUMBER OF DELAY ELEMENTS
CHAKRABARTI, S.; MITRA, S.K.
BELL L.BS., HOLMDEL, NJ, USA
IEEE TRANS. CIRCUITS AND SYST. (USA) VOL.CAS-27, NO.8 657-64 AUG. 1980 Coden: ICSYBT
Treatment: THEORETICAL
Document Type: JOURNAL PAPER
(32 Refs)
A COMBINATION OF TECHNIQUES TAKEN FROM GRAPH THEORY AND DECISION THEORY IS USED TO SOLVE THE PROBLEM OF REALIZATION OF 2-D DIGITAL FILTERS USING MINIMUM NUMBER OF DELAY ELEMENTS CALLED MINIMAL REALIZATION. THE SOLUTION IS PRESENTED IN THE FORM OF AN ALGORITHM WHICH, WHEN EXECUTED, YIELDS ONE (AND HENCE, INFINITELY MANY) MINIMAL REALIZATIONS.
Descriptors: TWO-DIMENSIONAL DIGITAL FILTERS; GRAPH THEORY; DECISION THEORY AND ANALYSIS
Identifiers: GRAPH THEORY; DECISION THEORY; DIGITAL FILTERS; DELAY ELEMENTS; ALGORITHM; MINIMAL REALISATION; DECISION METHOD; TWO DIMENSIONAL DIGITAL FILTER
Class Codes: B1270F; B6140; B1130; C5240

Fig 4 Search possibilities

(5) It is possible to combine a greater number of search aspects. This enables the user to design a precise and specific search.

(6) Computerized information retrieval is based on an interactive dialogue between the searcher and the central computer. This interactive facility allows for modifications during information retrieval leading to FLEXIBILITY in searching.

3. THE DIALOG INFORMATION RETRIEVAL SYSTEM

3.1 Introduction

During the last 15 years a number of both international and national information retrieval systems have been developed. One example of these is the DIALOG Information Retrieval System, with its main computers at Palo Alto, California. The DIALOG Information System contains over 200 databases covering widely different subject fields (see Table 1). DIALOG provides a powerful capability to search any of these files for information of specific interest to the searcher.

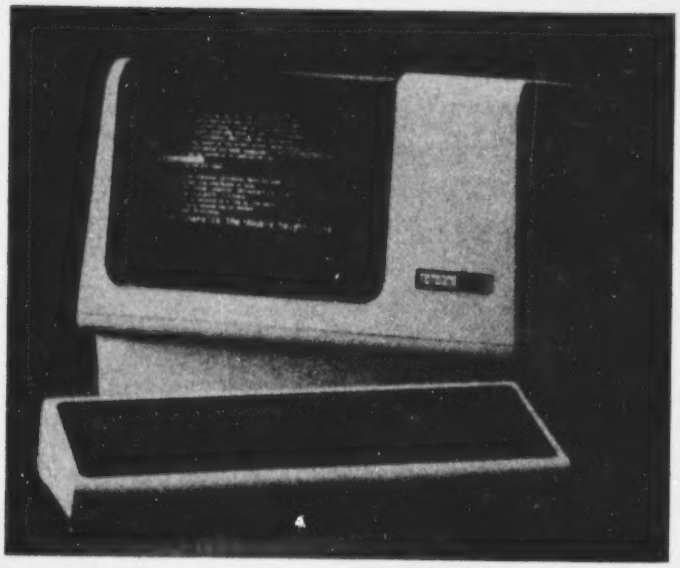
Table 1 DIALOG databases

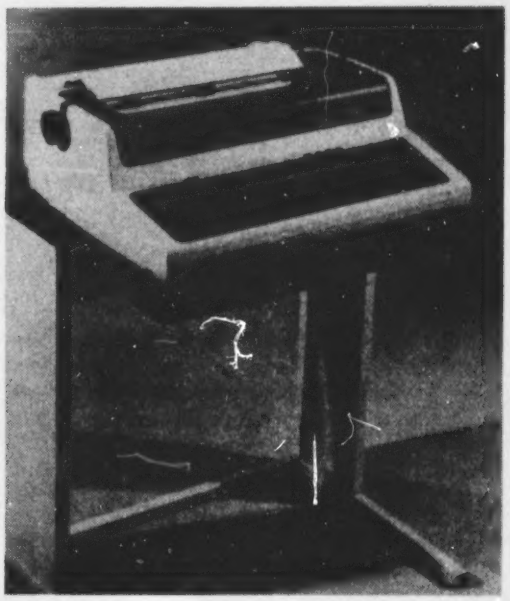
File #	Database	Online Connect Time Rate $/Hour	Offline Print Rate Per Full Record
15 *	ABI/INFORM	$73/hr	30¢
43 *	ADSEARCH	95	+25
10 *	AGRICOLA 79-present	25	5
110 *	AGRICOLA 70-78	25	5
9 *	AIM/ARM	25	10
38 *	AMERICA: HISTORY & LIFE	65	15
45 *	APTIC	35	10
112 *	AQUACULTURE	35	+15
116 *	AQUALINE	35	+30
44 ††	AQUATIC SCIENCES & FISHERIES ABS	47	20
56 *	ARTBIBLIOGRAPHIES MODERN	60	15
102 *†	ABI	90	15
96 *	BHRA FLUID ENGINEERING	65	15
88 *†	BIOGRAPHY MASTER INDEX	55	15
5 *	BIOSIS PREVIEWS 1977-present	49	15
55 *	BIOSIS PREVIEWS 1969-76	49	10
137 *†	BOOK REVIEW INDEX	55	15
2	CA SEARCH 67-71	70	20
3	CA SEARCH 72-76	70	20
104	CA SEARCH 77-79	70	20
4	CA SEARCH 80-present	70	20
50 *	CAB ABSTRACTS	35	+25
19 #	CHEMICAL INDUSTRY NOTES	60	20
31	CHEMNAME	70	20
30	CHEMSEARCH	55	18
131	CHEMSIS 72-76	70	20
130	CHEMSIS 77-present	70	20
64 *	CHILD ABUSE & NEGLECT	35	10
101 *	CIS	90	25
23	CLAIMS™ /CHEM 50-62	95	15
222	CLAIMS™ /CITATION	95	+$50.00
124 *	CLAIMS™ /CLASS	95	10
223	CLAIMS™ /UNITERM 50-62	300	15
224	CLAIMS™ /UNITERM 63-70	300	15
225	CLAIMS™ /UNITERM 71-present	300	15
24	CLAIMS™ /U.S. PATENTS 63-70	95	15
25	CLAIMS™ /U.S. PATENT ABS 71-present	95	+50
125	CLAIMS™ /U.S. PAT ABS WEEKLY	95	+50
8 *	COMPENDEX	68	+20
35 *	COMPREHENSIVE DISSERTATION INDEX	55	12
77 *	CONFERENCE PAPERS INDEX	73	20
135 *†	CONGRESSIONAL RECORD	75	15
60 *	CRIS/USDA	40	10
411	DIALINDEX	35	N/A
200 *	DIALOG PUBLICATIONS	15	N/A
100 *	DISCLOSURE	60	+$5.00
103 #†	DOE ENERGY	35	15
90	ECONOMIC ABSTRACTS INTERNATIONAL	65	20
22 *	EIS INDUSTRIAL PLANTS	90	+50
92 *	EIS NONMANUFACTURING ESTAB	90	+50
114 *	ENCYCLOPEDIA OF ASSOCIATIONS	55	15
69 *	ENERGYLINE	90	20
40 *	ENVIROLINE	90	20
68 *	ENVIRONMENTAL BIBLIOGRAPHY	60	15
1 *	ERIC	25	10
54 *	EXCEPTIONAL CHILD EDUC RES	25	10
172 *	EXCERPTA MEDICA 74-79	65	20
72 *	EXCERPTA MEDICA 80-present	65	20
73 *	EXCERPTA MEDICA (IN PROCESS)	65	20
20 *	FEDERAL INDEX	90	20
136 *	FEDERAL REGISTER ABSTRACTS	75	20
51 *	FOOD SCIENCE & TECH ABSTRACTS	65	15
79 *	FOODS ADLIBRA	55	10
105 #	FOREIGN TRADERS INDEX	45	+25
26 *	FOUNDATION DIRECTORY	60	30
27 *	FOUNDATION GRANTS INDEX	60	30
59 *	FROST & SULLIVAN DM2	90	25
58 *	GEOARCHIVE	70	20
89 *	GEOREF	65	20
66 *	GPO MONTHLY CATALOG	35	10
85 *†	GRANTS	60	30
39 *	HISTORICAL ABSTRACTS	65	15
123 §	INPADOC	95	20
12 *	INSPEC 1969-77	70	20
13 *	INSPEC 1978-present	70	20
74 *	INT'L PHARMACEUTICAL ABSTRACTS	50	15
76 *	IRL LIFE SCIENCES COLLECTION	45	15
14 *	ISMEC	73	20
80 *†	LABOR STATISTICS (LABSTAT)	45	+15
36 *	LANGUAGE & LANGUAGE BEHAVIOR ABS	65	15
150 *	LEGAL RESOURCE INDEX	90	20
61	LISA	50	10
47 *	MAGAZINE INDEX	75	20
75 *	MANAGEMENT CONTENTS	70	15
— †	MEDLINE	To be announced	
86 *†	MENTAL HEALTH ABSTRACTS	30	10
32 *	METADEX	80	12
29	METEOR/GEOASTROPHYS ABS	95	15
71 *	MLA BIBLIOGRAPHY	55	15
78	NATIONAL FOUNDATIONS	60	30
111 *	NATIONAL NEWSPAPER INDEX	75	20
21 *	NCJRS	35	+15
211	NEWSEARCH	95	20
48	NICEM	70	20
70	NICSEM/NIMIS	35	10
118 *†	NONFERROUS METALS	45	+25
6 *	NTIS	40	10
28 *	OCEANIC ABSTRACTS	73	20
204 *	ONTAP CA SEARCH	15	N/A
231 *	ONTAP CHEMNAME	15	N/A
201 *	ONTAP ERIC	15	N/A
49 *	PAIS INTERNATIONAL	60	15
42 *	PHARMACEUTICAL NEWS INDEX	90	20
57 *	PHILOSOPHER'S INDEX	55	15
48 *	PIRA	55	15
41 *	POLLUTION ABSTRACTS	73	20
91 *	POPULATION BIBLIOGRAPHY	55	10
11 *	PSYCINFO	65	10
98 *	PTS F&S INDEXES 1972-1975	90	@20
18 *	PTS F&S INDEXES 1976-present	90	@20
83 *	PTS INT'L FORECASTS	90	@20
84 *	PTS INT'L TIME SERIES	90	@20
17 *	PTS PREDALERT	90	@20
16 *	PTS PROMT	90	@20
81 *	PTS U.S. FORECASTS	90	@20
82 *	PTS U.S. TIME SERIES	90	@20
95	RAPRA ABSTRACTS	65	15
97 *	RILM ABSTRACTS	65	15
117 *†	SELECTED WATER RESOURCES	45	15
94 *	SCISEARCH® 1974-77 (subscribers)	40	10
	(nonsubscribers)	130	20
34 *	SCISEARCH® 1978-present (subscribers)	30	15
	(nonsubscribers)	120	25
7 *	SOCIAL SCISEARCH®	70	10
37 *	SOCIOLOGICAL ABSTRACTS	55	15
87	SPECIAL EDUCATION MATERIALS	65	15
62 *	SPIN	35	10
65 *	SSIE CURRENT RESEARCH	78	20
132	STANDARD & POOR'S NEWS	85	15
115 *	SURFACE COATINGS ABSTRACTS	65	15
108 #	TRADE OPPORTUNITIES	45	+25
107 #	TRADE OPPORTUNITIES WEEKLY	45	+50
63 ##	TRIS	40	10
52 *	TSCA INITIAL INVENTORY	45	15
126 *	U.S. EXPORTS 78-present	45	+25
127 *	U.S. EXPORTS 74-77	45	+25
93 *	U.S. POLITICAL SCIENCE DOCUMENTS	65	15
120 *	U.S. PUBLIC SCHOOL DIRECTORY	35	10
99 *	WELDASEARCH	65	15
33 *	WORLD ALUMINUM ABSTRACTS	50	10
67 *	WORLD TEXTILES	55	10

* Databases available under the Classroom Instruction Program
\# Available to U.S. Users only
\## Available only in the U.S. and Canada
† To be available in 1981
†† Not available in Canada
§ Not available in Japan
\+ Online TYPE charges also apply
@ 50¢ per full record TYPEd or PRINTed for nonsubscribers

3.2 What equipment will you need?

In order to access the DIALOG Information Retrieval Service you require a DIALOG compatible terminal, a modem, a telephone and a DIALOG password. Frequently, users already have a DIALOG compatible terminal in their organization. If not, dial-up terminals can be leased or purchased. Terminal speeds of 30 or 120 characters per second on any ASCII coded terminal are compatible.





Most terminal equipment incorporates some switches or other controls whose settings may need to be changed to match the requirements of different services or communication networks. The communication speed is an important variable; most online terminals operate today with most traffic at 300 baud (30 characters-per-second), and some traffic at 1200 baud (120 characters-per-second). Another major variable is the mode of transmission, full-duplex or half-duplex. In a half-duplex mode, communication takes place in either direction, but in only one direction at a time (e.g., terminal to computer, or vice versa). In full duplex mode, it is possible for communication to take place simultaneously in both directions over the same connection.

A password to enable you to search on DIALOG can be obtained, after completing the DIALOG order form, from the DIALOG main office:

Lockheed DIALOG Information Retrieval Service
3460 Hillview Avenue
Palo Alto, CA 94304
Telephone: 800/227-1960 (toll-free in U.S. except California)
800/982-5838 (toll-free in California)
415/858-3810
Telex: 334499 (DIALOG)
TWX: 910-339-9221

3.3 DIALOG availability

The DIALOG System is available 22 hours every week day. The DIALOG Service also features Saturday hours.

3.4 Methods of access

There are a variety of telephone access methods. Usually, the online services are connected to the terminal via the public telephone system by means of modems. In a few special circumstances, permanent leased telephone lines may be used to couple the terminal to the computer service, but typically a public transmission line is dialed up when the online service is to be used. In many cases, this is done by simply calling the telephone number of the computer center through the public direct dial telephone network. However, in addition to the usual public telephone system, several other commercial communication networks are available to provide data communication services (data only, not voice) that are appropriate for online utilities. Examples of these data transmission services are TYMNET, TELENET, and EURONET. In Sweden use is made of TELEPAK. These commercial data transmission networks have local telephone numbers (network "nodes") throughout various countries which can be called in order to gain access to their networks. Depending on the locations of the terminal and computer service, it may be considerably less expensive to use these data transmission services instead of the usual public telephone system for online searching. The search services allot a number of "ports" for each type of data communication entry. If you find that one means of entry is unavailable, an alternative entry means may be tried.

3.5 What will it cost?

The DIALOG service requires no start-up or minimum fees. You will be charged for the actual search time that you use. Costs can be subdivided into three parts:

1. Telecommunication charges
2. Connect time costs covering telecommunication costs and database royalties (figured to 1/1000 of an hour). The online connect time charges for the various databases are shown in Table 1.
3. Offline print charges (and in a small number of cases online print charges) per requested citation (see Table 1) for details.

Discounts. Although there are no initial fees or minimums required, users may find after accessing the system for a time, that one of the discount contract options would be cost effective for their organization. Contact the DIALOG main office for details of available discounts such as Discount Contract, Group Discount Contract and Subscription Contract.

Cost Effectiveness. The decreased necessary research time and the increased thoroughness of the search results make using the DIALOG System an extremely cost-effective research method.

4. THE INTERACTIVE ONLINE INFORMATION SEARCH

Three types of skill are necessary for carrying out interactive computerized searches:

(1) subject knowledge;

(2) terminal operating skill;

(3) knowledge of the information system to be used - the appropriate commands, type and quantity of information available, database structure, etc.

4.1 The search process

The computerized information search requires careful preparation and planning if it is to be successful. The search process involves a number of stages (see Fig 5).

1. Formulation of the specific information need in clear and concise terms.
2. Analysis of the original search statement into component aspects, which can be represented by keyword or descriptors.
3. Development and expansion of the search statement by means of synonyms, broader terms and terms related to the descriptors, so that all possible aspects of the search statement are covered. Tools for this development process are dictionaries, thesauri, encyclopaedias and handbooks. Previously known relevant references can provide valuable starting points.
4. Definition of the scope of the search with respect to purpose (e g practical application, survey of state of the art) and time (how far back the information is required).
5. Choice of appropriate information databases.
6. Connection to the information retrieval system and chosen database
7. Searching
8. Feedback and revision of search techniques
9. Display and printing of obtained references
10. Disconnection from system
11. Assessment of usefulness of references

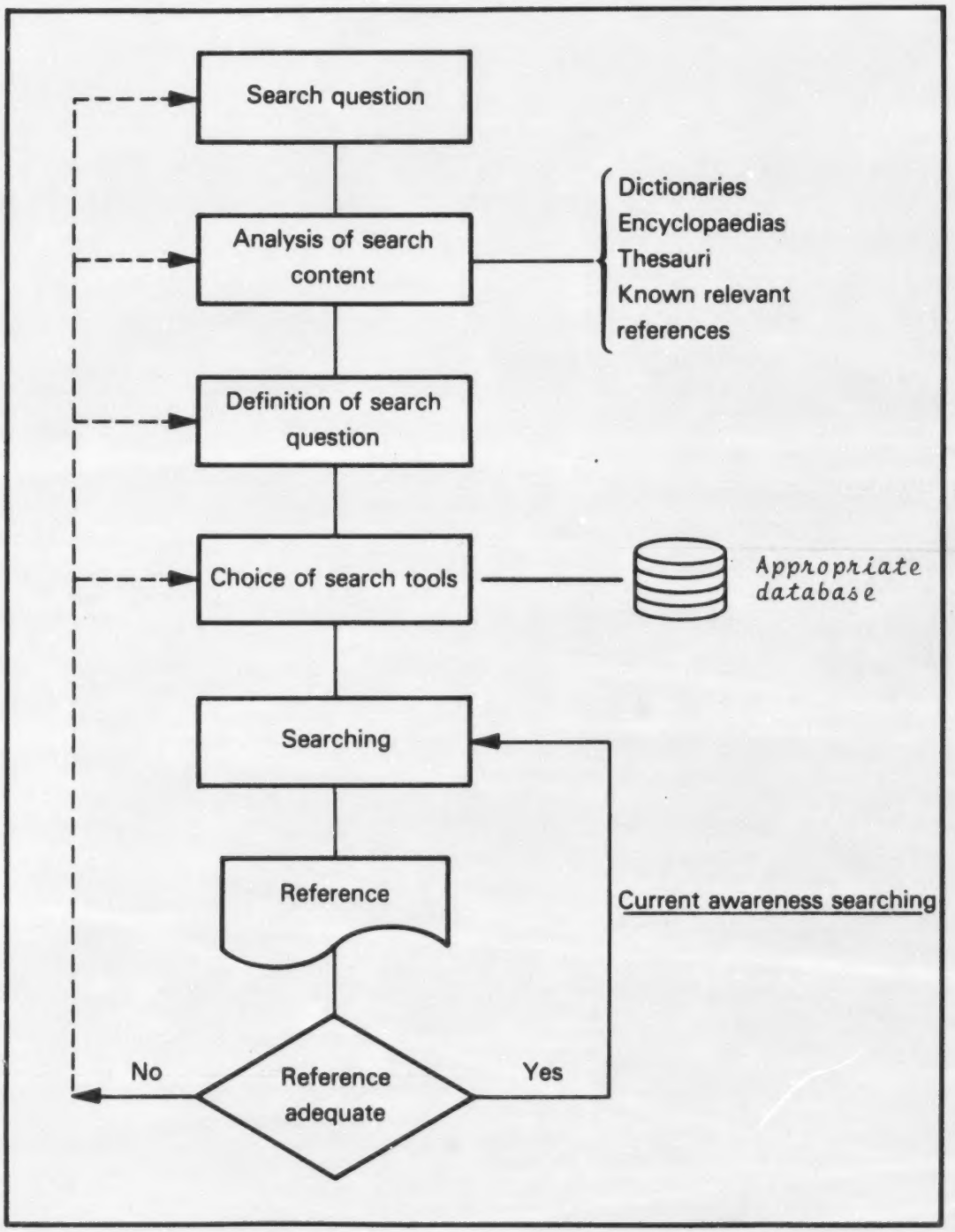


Fig 5. Diagrammatic representation of the search process

4.2 Stages in a computer search

The interactive search can be described in a number of stages.

(1) The user dials the telephone number to the appropriate telecommunication node (or centre) to gain access to the system.

(2) Contact with the system is signalled by means of a high pitched tone.

(3) Connection is made by means of the telephone and modem.

(4) The appropriate password is keyed in via the terminal. This is called "logging in" and gives access to the information retrieval system. (Each user/group has a specific password to facilitate invoicing of charges).

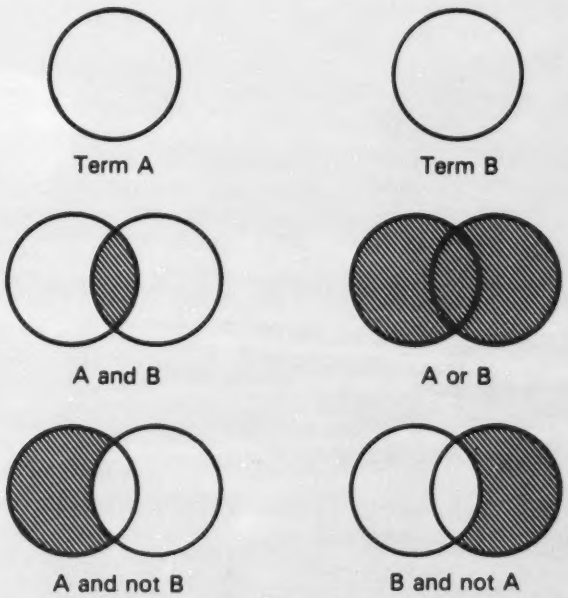
(5) The system replies with information about the databases available and the user selects and keys in the base chosen for the search.

(6) The searcher then keys in the terms which cover the search question.

(7) A dialogue then ensues between the user and the system, the computer replying with information on how many references the database contains for each of the terms keyed in.

(8) The search is developed by means of further related and broader terms, together with synonyms.

(9) A search strategy is developed, in which terms are grouped in parameters and linked according to Boolean logic with AND, OR, or NOT operators (se Fig 6). This search strategy is keyed in.



(10) The system responds with the number of references fulfilling the prescribed conditions.

(11) The user asks for a display of sample references.

(12) If the sample references are relevant, the user can order a print-out of the total available references of this type, either directly "on-line" via the terminal or "off-line" with a print-out at the computer centre and subsequent delivery by post. (Off-line printing is used if there are many references, in order to reduce costs.)

(13) The user then indicates that the search is over - "log-off" and connection via the modem to the computer is broken.

5. INSTRUCTIONS FOR DIALOG SEARCHING

In order to be able to search on the DIALOG Information Retrieval System you need to know the routines for: logging in and logging off
search commands
type or print out commands.

In this manual, SYSTEM RESPONSES appear in CAPITAL (OR UPPER CASE) letters. The system indicates that it is ready to accept new commands or search statements by the prompt sign ?

User responses are underlined. Each user command must be followed by a carriage return (CR). Identify the RETURN key on your terminal. Commands will not be operated unless the carriage return is pressed. (Note the RETURN key should only be pressed once after a given command. If you press the RETURN key more than once (for example while waiting for a slow system response) the system will automatically stop processing your command and respond with a prompt ?

Operator errors

A novice operator is often worried by what happens if he/she makes a mistake. The DIALOG system has been designed to be tolerant to user errors and allow corrections. YOU CANNOT HARM THE SYSTEM - all you can do by mistakes is to use more time. If you make an error (commonly a typing error) in the input character sequence, don't panic, you can backspace and erase by using CONTROL H. Hold down the CONTROL key (sometimes marked CTRL) on your terminal and press the H key for each character to be backspaced. This process automatically erases, internally in the computer, the wrong characters. You can then re-enter the desired characters.

Erasing a whole line

If you notice a mistake at the beginning of a long line of input, it may be easier to do this by cancelling the whole line and starting again. This can be done by pressing the ESCAPE key (sometimes marked ESC) followed by RETURN. The system will then ignore the line and give another prompt ?

Stopping a display printout

You may find yourself in the situation, where you want to stop the data coming from the system. Simply press the BREAK (or INTERRUPT) key. By means of these controls you can control DIALOG input and out-put.

5.1 Log on procedures

A - For TELENET

1. Set terminal on full duplex

2. Turn on terminal

3. Turn on modem (note some modems are permanently connected to power supply)

4. Dial local TELENET number _____

5. When you hear high pitched "peep" tone, place the telephone receiver in sockets on modem (or press appropriate modem switch)
   "Online" light on terminal will light up when connection is established

6. Press carriage return twice (CR) (CR)

   System responds TELENET
   415 DL 9 (local

   TERMINAL =

7. Press CR (CR)

   System responds ∂

8. User keys in DIALOG computer number C 415 20

9. System responds ∂ 415 20 CONNECTED
   ENTER YOUR DIALOG PASSWORD

10. Key in your DIALOG password .....(CR) .....

B - TYMNET

1. Set terminal on full duplex

2. Turn on terminal

3. Turn on modem (note some modems are permanently connected to power supply)

4. Dial local TYMNET number _____

5. When you hear high pitched "peep" tone, place the telephone receiver in sockets on modem (or press appropriate modem switch)
   TYMNET responds with message PLEASE TYPE YOUR TERMINAL IDENTIFIER

6. Key in e — e

7. System responds — - 1072 - 0035
   please log in:

8. Key in your code for DIALOG retrieval service i LRS (CR)

9. System responds — HOST IS ONLINE
   ENTER YOUR DIALOG PASSWORD

10. Enter DIALOG password . . . . . followed by (CR).

C - TELEPAK

1. Set terminal on full duplex
2. Switch on terminal
3. Dial Stockholm TELEPAK no. 08-24 59 35
4. When you hear high pitched "peep" tone, press the data A switch on the modem and replace the receiver
   The "online" light on the terminal lights up when connection is established
5. Press the RETURN key on your terminal
6. TELEPAK answers DATABAS 300
   PASSWORD:
7. Type in your password .....
8. The system answers ACCEPTED TURN TO AUTO MODE
9. Press the AUTO switch on the modem
10. You will hear the return telephone signal and see that all three lights on the modem are lit
11. The system responds PLEASE TYPE YOUR TERMINAL IDENTIFIER
12. Type A
13. System responds PLEASE LOG IN:
14. Type in your user code, host code and system password
15. When you are connected to the host computer the system responds
    REMOTE CALL CONNECTED
    ENTER YOUR DIALOG PASSWORD
16. Key in your DIALOG PASSWORD

Alternative method for connection to DIALOG

Should the packet switching node connection not work, it is possible, but more expensive to dial the data exchange directly.

1. Ring 08-14 38 00
2. When you hear a high "peep" tone, press in the data A key on the modem
3. Replace telephone receiver
4. Continue as from (11) above.

5.2 Searching

5.2.1 Prepare your search (see section 4.1)

The importance of careful search preparation cannot be overemphasized.

(1) Describe your specific information need in clear and concise terms.

(2) Analyze the original search statement into component aspects, which can be represented by keywords or descriptors.

(3) Develop and expand the search statement by means of synonyms, broader terms and terms related to the descriptors, so that all possible aspects of the search statement are covered. Tools for this development process are dictionaries, thesauri, encyclopaedias and handbooks. Previously known relevant references can provide valuable starting points.

Examples of search aids for COMPENDEX file 8 are:

1. SHE (Subject Headings for Engineering). 1972.
   The alphabetically arranged authority list of Main Headings and Subheadings used for indexing. For comprehensive searching the 1972 and 1970 editions of SHE should be used. (The 1970 edition is out of print.) $15.00.

2. Supplement to 1972 Subject Headings for Engineering (SHE)
   Lists Main Headings and Subheadings added to SHE from 1973 to 1977.

3. PIE (Publications Indexed for Engineering). 1977.
   The annual comprehensive list of Ei's source material. Includes CODEN for periodicals. $5.00.

4. CARD-A-LERT Brochure
   This brochure describes, in free-language phrases, the subject areas covered by the 38 groups and 171 divisions of the scheme. Included is an alphabetical subject index to the codes. Free.

5. The Engineering Index COMPENDEX: Online User's Manual for the Lockheed DIALOG Information Retrieval Service
   Includes a listing of Ei special characters and the CARD-A-LERT Brochure. $10.00

6. Subheading Index
   An alphabetically arranged listing of Ei Subheadings cross-referred to the Main Headings with which they may be used. $15.00

7. Subject Heading Guide to Engineering Categories
   Main Headings and some Subheadings are arranged according to the CAL codes to which they apply making it possible for the searcher to scan conceptually related Main Headings. $10.00.

These items are all produced by and available from Engineering Index, Inc., 345 East 47th St., New York, NY 10017.

Examples of search aids for INSPEC files 12 and 13 are:

- INSPEC Database Users' Guide. 1976. $15 (from U.S.), 7.50 pounds (from U.K.), 8 pounds (elsewhere). Contains introduction to INSPEC, the INSPEC database, bibliographic description, classification and indexing schemes, sample records, searching, and search examples.

- INSPEC Thesaurus 1977. 1976. $60 (from U.S.), 25 pounds (from U.K.), 40 pounds (elsewhere). Contains about 8.400 terms, of which 5.000 are used terms and 3.400 are cross-reference or lead-in terms.

- INSPEC Classification 1977. $20 (from U.S.), 10 pounds (from U.K.), 12 pounds (elsewhere). Contains the substantially revised classification scheme.

- Concordance to the INSPEC Classification, 1969-77. $12 (from U.S.), 6 pounds (from U.K.), 6 pounds (elsewhere). Needed for retrospective searching using classification codes.

- List of Journals. $4 (from U.S.), 2 pounds (from U.K.), 3 pounds (elsewhere). Published annually; gives full details of journal coverage, including publishers' names and addresses, and journal CODEN.

These publications may be purchased from INSPEC at the following address:

North America:

INSPEC Market Administrator
IEEE
445 Hoes Lane
Piscataway, NJ 08854
USA

Rest of World:

INSPEC Publications
IEE
P.O. Box 26
Hitchin, Herts SG5 1SA
ENGLAND

5.2.2 Select an appropriate database

Select an appropriate database for searching with the aid of DIALOG's Database Catalogue or DIALINDEX. Table 2 shows the databases according to their main subject coverage. Table 2 also gives online connect time costs and offline print costs.

Databases which are particularly appropriate for electircal and electronic engineering are:

INSPEC	files	12	physics
		13	electrical and electronic engineering computers and control
COMPENDEX	file	8	general engineering and technology
NTIS	file	6	general science
SCISEARCH	files	34 94	general science
DISSERTATION ABSTRACTS	file	35	general science
CONFERENCE PAPERS INDEX	file	77	general science

Detailed descriptions of these files are given in the copies of the DIALOG "bluesheets" at the back of this manual.

Table 2 Databases according to subject coverage (taken from Dialog's Database catalogue)

File No.	DATABASE (Supplier)	Online Connect Time Rate $/Hour	Offline Print Rate Per Full Record
	APPLIED SCIENCE & TECHNOLOGY		
45	APTIC (Air Pollution Tech. Info. Ctr. & the Franklin Institute)	$47	20¢
44	AQUATIC SCIENCE & FISHERIES ABSTRACTS (NOAA)	35	15
112	AQUACULTURE (NOAA)	35	15
116	AQUALINE (Water Reserach Centre)	35	30
96	BHRA FLUID ENGINEERING (British Hydromechanics Research Association)	65	15
23	CLAIMS™/CHEM 1950–1970 (IFI/Plenum Data Company)	95	15
223	CLAIMS™/UNITERM 1950–1970 (IFI/Plenum Data Company)	300	15
224	CLAIMS™/UNITERM 1971–1977 (IFI/Plenum Data Company)	300	15
225	CLAIMS™/UNITERM 1978–present (IFI/Plenum Data Company)	300	15
222	CLAIMS™/CITATION (IFI/Plenum Data Company)	95	$50.00
124	CLAIMS™/CLASS (IFI/Plenum Data Company)	95	10
24	CLAIMS™/U.S. PATENTS 1971–1977 (IFI/Plenum Data Company)	95	15
25	CLAIMS™/U.S. PATENTS ABSTRACTS 1978–present (IFI/Pelnum Data Company)	$95	50¢
125	CLAIMS™/U.S. PATENT ABSTRACTS WEEKLY (IFI/Plenum Data Company)	95	50
8	COMPENDEX (Engineering Index, Inc.)	68	20
60	CRIS/USDA (USDA)	40	10
103	★ DOE ENERGY (U.S. Dept. of Energy)	35	15
69	ENERGYLINE® (Environment Information Center, Inc.)	90	20
40	ENVIROLINE® (Environment Information Center, Inc.)	90	20
68	ENVIRONMENTAL BIBLIOGRAPHY (Internatl. Acad. at Santa Barbara)	60	15
51	FOOD SCIENCE AND TECHNOLOGY ABS. (Intl. Food Info. Service)	65	15
79	FOODS ADLIBRA (K&M Publications, Inc.)	55	10
123	INPADOC (International Patent Documentation Center)	95	20
74	INTERNATIONAL PHARMACEUTICAL ABS. (Am. Soc. of Hospital Pharmacists)	50	15
14	ISMEC (Cambridge Scientific Abstracts)	73	20
32	METADEX (American Society for Metals)	80	12
118	★ NONFERROUS METALS ABSTRACTS (British Non-Ferrous Metals Technology Center)	45	20
6	NTIS (National Technical Info. Service, U.S. Dept. of Commerce)	40	10
28	OCEANIC ABSTRACTS (Cambridge Scientific Abstracts)	73	20
48	PIRA (Research Assoc. for Paper & Board, Printing & Packaging Indus.)	55	15
41	POLLUTION ABSTRACTS (Cambridge Scientific Abstracts)	73	20
95	RAPRA ABSTRACTS (Rubber and Plastics Research Association of Great Britain)	65	15
117	★ SELECTED WATER RESOURCES ABSTRACTS (U.S. Dept. of the Interior)	45	15
115	SURFACE COATINGS ABSTRACTS (Paint Research Association of Great Britain)	65	15
63	TRIS (U.S. Department of Transportation and Transportation Research Board)	40	10
99	WELDASEARCH (The Welding Institute)	65	15
33	WORLD ALUMINUM ABSTRACTS (American Society for Metals)	50	10
67	WORLD TEXTILES (Shirley Institute)	55	10

*After a three-month trial period the rate per record TYPEd or PRINTed will increase to 50¢ unless subscription arrangement is made through Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106 (216/795-3000)

★Forthcoming database

File No.	DATABASE (Supplier)	Online Connect Time Rate $/Hour	Offline Print Rate Per Full Record
	SCIENCE		
110	AGRICOLA 1970–1978 (U.S.D.A. Technical Information Systems)	$30	10¢
10	AGRICOLA 1979–present (U.S.D.A. Technical Information Systems)	30	10
55	BIOSIS PREVIEWS 1969–1973 (Biosciences Information Service)	49	10
5	BIOSIS PREVIEWS 1974–present (Biosciences Information Service)	49	15
2	CA SEARCH 1967–1971 (American Chemical Society)	70	18
3	CA SEARCH 1972–1976 (American Chemical Society)	$70	18¢
104	CA SEARCH 1977–1979 (American Chemical Society)	70	18
4	CA SEARCH 1978–present (American Chemical Society)	70	18
31	CHEMNAME™ (Chemical Abstracts Service, DIALOG Information Retrieval Service)	70	20
30	CHEMSEARCH™ (Chemical Abstracts Service, DIALOG Information Retrieval Service)	55	16
130	CHEMSIS™ 1977–present (Chemical Abstracts Service, DIALOG Information Retrieval Service)	70	20
131	CHEMSIS™ 1972–1976 (Chemical Abstracts Service, DIALOG Information Retrieval Service)	70	20
50	CAB ABSTRACTS (Commonwealth Agricultural Bureaux)	35	25
72	EXCERPTA MEDICA 1980–present (Excerpta Medica)	65	20
73	EXCERPTA MEDICA IN PROCESS (Excerpta Medica)	65	20
172	EXCERPTA MEDICA 1974–1979 (Excerpta Medica)	65	20
58	GEOARCHIVE (Geosystems)	70	20
89	GEOREF (American Geological Society)	65	20
12	INSPEC 1969–1977 (Institution of Electrical Engineers)	70	20
13	INSPEC 1978–present (Institution of Electrical Engineers)	70	20
76	IRL LIFE SCIENCES COLLECTION (Information Retrieval Ltd.)	45	15
152	★ MEDLINE 1966–1974 (U.S. National Library of Medicine)	35	15
153	★ MEDLINE 1975–1979 (U.S. National Library of Medicine)	35	15
154	MEDLINE 1980–present (U.S. National Library of Medicine)	35	15
29	METEOROLOGICAL AND GEOASTROPHYSICAL ABSTRACTS (American Meteorological Society and NOAA)	95	15
204	ONTAP™ CA SEARCH (American Chemical Society)	15	na
231	ONTAP™ CHEMNAME (American Chemical Society)	15	na
94	SCISEARCH® 1974–1977 (Institute for Scientific Information) subscriber	40	10
94	SCISEARCH® 1974–1977 (Institute for Scientific Information) nonsubscriber	130	20
34	SCISERACH® 1978–present (Institute for Scientific Information) subscriber	30	10
34	SCISEARCH® 1978–present (Institute for Scientific Information) nonsubscriber	120	25
62	SPIN (American Institute of Physics)	35	10
52	TSCA INITIAL INVENTORY (Environmental Protection Agency, DIALOG Information Retrieval Service)	45	15

★Forthcoming database

File No.	DATABASE (Supplier)	Online Connect Time Rate $/Hour	Offline Print Rate Per Full Record
	MULTIDISCIPLINARY AND CURRENT AFFAIRS		
102	★ ASI (Congressional Information Service, Inc.)	$90	15¢
88	★ BIOGRAPHY MASTER INDEX (Gale Research Company)	55	15
137	★ BOOK REVIEW INDEX (Gale Research Company)	55	15
101	CIS (Congressional Information Service, Inc.)	90	25
35	COMPREHENSIVE DISSERTATION INDEX (Univ. Microfilms Inc.)	55	12
77	CONFERENCE PAPERS INDEX (Cambridge Scientific Abstracts)	73	20
135	★ CONGRESSIONAL RECORD ABSTRACTS (Capitol Services, Inc.)	75	15
411	DIALINDEX™ (DIALOG Information Retrieval Service)	35	na
200	DIALOG PUBLICATIONS (DIALOG Information Retrieval Service)	15	na
114	ENCYCLOPEDIA OF ASSOCIATIONS (Gale Research Company)	55	15
20	FEDERAL INDEX (Capitol Services, Inc.)	90	20
136	★ FEDERAL REGISTER ABSTRACTS (Capitol Services, Inc.)	75	20
26	FOUNDATION DIRECTORY (The Foundation Center)	60	30
27	FOUNDATION GRANTS INDEX (The Foundation Center)	60	30
66	GPO MONTHLY CATALOG (U.S. Government Printing Office)	35	10
85	★ GRANTS DATABASE (Oryx Press)	60	30
150	LEGAL RESOURCE INDEX (Information Access Corp.)	90	20
47	MAGAZINE INDEX (Information Access Corp.)	75	20
78	NATIONAL FOUNDATIONS (The Foundation Center)	60	30
111	NATIONAL NEWSPAPER INDEX (Information Access Corporation)	75	20
211	NEWSEARCH (Information Access Corporation)	95	20
911	NEWSEARCH (Information Access Corporation) subscriber	na	na
49	PAIS INTERNATIONAL (Public Affairs Information Service, Inc.)	60	15
65	SSIE CURRENT RESEARCH (Smithsonian Science Info. Exchange)	78	20
	BUSINESS/ECONOMICS		
15	ABI/INFORM (Data Courier, Inc.)	$73	30¢
43	★ ADSEARCH (Corporate Intelligence, Inc.)	95	25
19	CHEMICAL INDUSTRY NOTES (American Chemical Society)	75	20
100	DISCLOSURE (Disclosure Incorporated)	60	$5.00
90	ECONOMICS ABSTRACTS INTERNATIONAL (Learned Information Ltd.)	65	20
22	EIS INDUSTRIAL PLANTS (Economic Information Sytems, Inc.)	90	50
92	EIS NONMANUFACTURING ESTABLISHMENTS (Economic Information Systems, Inc.)	90	50
105	FOREIGN TRADERS INDEX (U.S. Department of Commerce)	45	25
59	FROST & SULLIVAN DM² (Frost & Sullivan)	90	20
80	LABOR STATISTICS (LABSTAT) (Bureau of Labor Statistics, U.S. Dept. of Labor)	45	15
75	MANAGEMENT CONTENTS® (Management Contents, Inc.)	70	15
42	PHARMACEUTICAL NEWS INDEX (Data Courier, Inc.)	90	20
98	PTS F&S INDEXES 1972–1975 (Predicasts, Inc.)*	90	20
18	PTS F&S INDEXES 1976–present (Predicasts, Inc.)*	90	20
84	PTS INTERNATIONAL TIME SERIES (Predicasts, Inc.)*	90	20
83	PTS INTERNATIONAL FORECASTS (Predicasts, Inc.)*	90	20
17	PTS PREDALERT (Predicasts, Inc.)*	90	20
16	PTS PROMT (Predicasts, Inc.)*	90	20
81	PTS U.S. FORECASTS (Predicasts, Inc.)*	90	20
82	PTS U.S. TIME SERIES (Predicasts, Inc.)*	90	20
132	STANDARD & POOR'S NEWS (Standard & Poor's Corp.)	85	15
106	TRADE OPPORTUNITIES (U.S. Department of Commerce)	45	25
107	TRADE OPPORTUNITIES WEEKLY (U.S. Department of Commerce)	45	50
126	U.S. EXPORTS 1978–present (U.S. Department of Commerce)	45	25

*After a three-month trial period the rate per record TYPEd or PRINTed will increase to 50¢ unless subscription arrangement is made through Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106 (216/795-3000)

†Forthcoming database

5.3 Subject search

Having selected your files type in the command begin or b followed by the file number and CR (carriage return)

Example	COMPENDEX	File no. 8
	INSPEC (current)	File no. 13

```
? b 8
        15Jul81 13:22:59 User17419
  $0.12  0.008 Hrs File1*
File8:COMPENDEX - 70-81/Jul
(Copr. Engineering Index Inc.)
        Set Items Description
        --- ----- -----------

? b 13
        15Jul81 13:29:32 User17419
  $1.62  0.108 Hrs File8 3 Descriptors
File13:INSPEC - 78-81/Iss14
(Copr. IEE)
See file 12(1969 thru 1977)
        Set Items Description
        --- ----- -----------
```

Choose initial concepts

Key in select or s followed by a space and the chosen term

Example	select	s

```
? s solar
        1 11989 SOLAR
? s energy
        2 70755 ENERGY
```

- SELECT command creates a list or set of citations

Set number

number of postings for each term chosen.(or reference) in the database containing the term 'energy'

Combine the terms with Boolean operators

Solar OR energy

Solar AND energy

Energy NOT solar

Key in combine or C followed by the set numbers linked by Boolean OR, AND, NOT:

Example

```
? S SOLAR

          1 13189 SOLAR
? S ENERGY

          2 84790 ENERGY
? C 1 AND 2

          3  6966  1 AND 2
? S HEATING

          4 21676 HEATING
? C 3 AND 4

          5  2018  3 AND 4
```

Boolean operators are used to indicate to the computer the logical relationship between terms

Order of priority:

NOT

AND

OR

The initial logic can be keyed in in one step using the ss (select steps) command

ss solar and energy

```
? SS SOLAR AND ENERGY AND HEATING

          1 13189 SOLAR
          2 84790 ENERGY
          3 21676 HEATING
          4  2018  1 AND 2 AND 3
```

This saves time (and therefore reduces costs)

5.4 Displaying the results

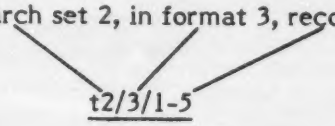
In order to display the results of your search - use the type command or t followed by the set number t2.

It is possible to order the display of the records in greater or lesser detail depending on your need. This is done by entering the code number for the desired record format after the set number/

t2/3

Range of records is entered after another/

Example type search set 2, in format 3, records 1-5.



t2/3/1-5

Examples of different formats are given below:

FORMAT 1 - DIALOG Accession number

```
? t5/1/3
5/1/3
 1162119
```

FORMAT 2 - Full record except abstract

```
? t5/2/3
5/2/3
   1162119    ID NO.- EI810762119
  SOLAR BATH-TAP.
  Pallis, S.
  Sol Energy  v 25 n 6 1980 p 531-536    CODEN: SRENA4
  ISSN 0038-092X
  DESCRIPTORS: (*WATER HEATERS, *Solar), (HEATING, Solar), SOLAR ENERGY,
MATHEMATICAL MODELS, ENERGY CONSERVATION,
  CARD ALERT: 643, 615, 657, 921, 901
```

FORMAT 3 - Bibliographic citation

```
? t5/3/3
5/3/3
   1162119    ID NO.- EI810762119
  SOLAR BATH-TAP.
  Pallis, S.
  Sol Energy  v 25 n 6 1980 p 531-536    CODEN: SRENA4
  ISSN 0038-092X
```

FORMAT 4 - Title and abstract

```
? t5/4/3
5/4/3
   1162119   ID NO.- EI810762119
  SOLAR BATH-TAP.
  The paper describes how a conventional solar domestic water heating
system can be retrofitted with a third, solar tap over the bath.  When a
bath is being mixed, if water from the solar tap is now included in the mix
instead of cold water, then draw-off of hot tap water is reduced.  The
energy saving is analyzed and signficant parameters are derived.  The
effect of storage capacity on this saving is discussed.  An example of
retrospectively adding a solar bath tap is worked out.  2 refs.
```

FORMAT 5 - Full record

```
? t5/5/3
5/5/3
   1162119   ID NO.- EI810762119
  SOLAR BATH-TAP.
  Pallis, S.
  Sol Energy  v 25 n 6 1980 p 531-536   CODEN: SRENA4
  ISSN 0038-092X
  The paper describes how a conventional solar domestic water heating
system can be retrofitted with a third, solar tap over the bath.  When a
bath is being mixed, if water from the solar tap is now included in the mix
instead of cold water, then draw-off of hot tap water is reduced.  The
energy saving is analyzed and signficant parameters are derived.  The
effect of storage capacity on this saving is discussed.  An example of
retrospectively adding a solar bath tap is worked out.  2 refs.
  DESCRIPTORS: (*WATER HEATERS, *Solar), (HEATING, Solar), SOLAR ENERGY,
MATHEMATICAL MODELS, ENERGY CONSERVATION,
  CARD ALERT: 643, 615, 657, 921, 901
```

FORMAT 6 - Title, source and EI abstract number

```
? t5/6/3
5/6/3
   1162119   ID NO.- EI810762119
  SOLAR BATH-TAP.
  Sol Energy  v 25 n 6 1980 p 531-536
```

FORMAT 7 - Bibliographic citation and abstract

```
? t5/7/3
5/7/3
   1162119   ID NO.- EI810762119
  SOLAR BATH-TAP.
  Pallis, S.
  Sol Energy  v 25 n 6 1980 p 531-536   CODEN: SRENA4
  ISSN 0038-092X
  The paper describes how a conventional solar domestic water heating
system can be retrofitted with a third, solar tap over the bath.  When a
bath is being mixed, if water from the solar tap is now included in the mix
instead of cold water, then draw-off of hot tap water is reduced.  The
energy saving is analyzed and signficant parameters are derived.  The
effect of storage capacity on this saving is discussed.  An example of
retrospectively adding a solar bath tap is worked out.  2 refs.
```

```
? t5/8/3
5/8/3
   1162119   ID NO.- EI810762119
  SOLAR BATH-TAP.
  DESCRIPTORS: (*WATER HEATERS, *Solar), (HEATING, Solar), SOLAR ENERGY,
MATHEMATICAL MODELS, ENERGY CONSERVATION,
  CARD ALERT: 643, 615, 657, 921, 901
```

Note on use of the different record formats:

Choice of format depends on your needs.

You may wish to examine the results of a given search strategy, with a possible view to modification - format 8 'title and indexing' would enable you to assess relevance and the indexing terms would help you in subsequent modification.

You may need a few quick references - use format 3 or 2.

If you need a detailed description - use format 7 (bibliographic citation with abstract) or 5 (full record with abstract).

Offline prints

If your search results in a set with a large number of references which appear to be of interest, it is cheaper to order offline printout at the DIALOG main centre in Palo Alto, Cal. (That way telecommunication costs are eliminated.).
The command for offline prints is print or pr.

Example pr6/ 5/ 1-48

Note: It is usual to use format 5 (full record) for offline prints/

When the offline prints arrive; the search history is given on the first page of the offline printout.

```
User 6309   Date:29sep81   Time: 7:11:37   File: 33

Set Items Description
  1    97  XPS OR AES
  2   423  ESCA OR PHOTOELECTRON OR AUGER?
  3   459  1OR2
  4     1  ARGON(5W)SPUTTERING
  5  2027  OXIDATION
  6  1376  ADHESIVE
  7  3386  5 OR 6
  8    70  3AND7
  9     0  TORE [redacted]/DOKTORAND

Print 8/5/1-70

Search Time:  0.127   Prints:  70   Descs.:  9
```

5.5 The more complex search

5.5.1 Search preparation - Expand commands

In addition to printed search aids - such as thesauri and dictionaries - computerized information stores can be used to find associated search terms for a specific concept. INSPEC has an online thesaurus which not only shows adjacent alphabetic terms, but also related terms RT

In order to use the thesaurus or dictionary use the term expand or e.

The expand command results in a display of the dictionary file, or basic index of the database with the 'postings' or 'occurrence counts' for each term. The alphabetic organization of the dictionary file leads to suggestions for terms similar to that already selected.

Should you wish to extend the initial term display use the command page or p.

The use of the expand command can result in finding a number of associated terms which may be selected by their E number.

Example

```
? E TRANSFORMER

REF  ITEMS  INDEX-TERM
E1       1  TRANSFORMED VOLUME
E2       1  TRANSFORMED
              WAVE-FOLLOWING FRAME
E3    2994 *TRANSFORMER
E4       1  TRANSFORMER ACCEPTANCE
              TESTING
E5       4  TRANSFORMER ACCURACY
E6       1  TRANSFORMER ACTION
E7       1  TRANSFORMER AMPLIFIER
              CIRCUIT
E8       1  TRANSFORMER ANALYSIS
                                    -MORE-
? P

REF  ITEMS  INDEX-TERM
E9       1  TRANSFORMER AND CONNECTI
              ON SUBSTATIONS
E10      1  TRANSFORMER APPLICATION
              ENGINEER
E11      1  TRANSFORMER APPLICATIONS
E12      1  TRANSFORMER ARM RATIO
E13      1  TRANSFORMER ARRANGEMENT
E14      1  TRANSFORMER ASKAREL
E15      1  TRANSFORMER ASSEMBLIES
E16      2  TRANSFORMER ASSEMBLY
E17      1  TRANSFORMER ASYMMETRY
E18      1  TRANSFORMER AUGMENTATION
                                    -MORE-
? S E3-E18

          3  2994 E3-E18
                  E3: TRANSFORMER
```

5.5.2 Truncation

You can truncate a search term, by using the variable character symbol ?, thereby requesting retrieval of all records containing a term that begin with the stem or root of the term. eg. TRANSFORM.....ER

A search on COMPENDEX for transformer gives

s transformer? CR

3 5579 TRANSFORMER?

The 5579 postings correspond to the postings for 29 separate terms (see dictionary display)

```
            2  5579 TRANSFORMER?
? S TRANSFORMER?

            3  5579 TRANSFORMER?
? E TRANSFORMER

REF ITEMS  INDEX-TERM
E1      1  TRANSFORMEER
E2      3  TRANSFORMEES
E3   3747 +TRANSFORMER
E4      2  TRANSFORMER BUBBLING
E5      1  TRANSFORMER CAPACITANCE
             MODELS
E6      1  TRANSFORMER CHARGING ,
E7      1  TRANSFORMER COILS
E8      1  TRANSFORMER CORE
E9      1  TRANSFORMER FEEDBACK
E10     1  TRANSFORMER FEEDERS
                                  -MORE-
? P

REF ITEMS  INDEX-TERM
E11     1  TRANSFORMER INDUCTANCE
             MODELS
E12     1  TRANSFORMER LIFE
E13     2  TRANSFORMER LOADING
             POLICIES
E14     6  TRANSFORMER OIL
E15     2  TRANSFORMER OVERLOADING
E16     1  TRANSFORMER PADS
E17     2  TRANSFORMER SATURATION
E18     6  TRANSFORMER SHEET
E19     1  TRANSFORMER SHEETS
E20     6  TRANSFORMER STEEL
                                  -MORE-
? P

REF ITEMS  INDEX-TERM
E21     1  TRANSFORMER SUBSTATIONS
E22     6  TRANSFORMER WINDINGS
E23     2  TRANSFORMER-RECTIFIERS
E24     2  TRANSFORMER-TERMINATED
             LINES
E25    26  TRANSFORMER'S
E26     1  TRANSFORMERAS
E27     1  TRANSFORMERBOARD
E28     1  TRANSFORMERETTES
E29    91  TRANSFORMERLESS
E30  3586  TRANSFORMERS
E31     1  TRANSFORMERS, PULSE
                                  -MORE-
? S E6-E28

          4    72 E6-E28
                  E3: TRANSFORMER
? S E3-E24

          5  3747 E3-E24
                  E3: TRANSFORMER
```

Truncation is a useful way of gathering together a number of related terms and entering them quickly at the terminal.

Caution a word of warning.

Truncation should be used with care - very short stems will result in the retrieval of many irrelevant entries or 'false-drops'

e.g. ss trans?

```
? ss trans?
          2148716 TRANS?
```

May include the following:

```
TRANS-DIAZIDOHEXAPHENYLC
  YCLOPHOSPHONITRILE----
TRANS-NEPTUNIAN PLANETS-
TRANS-PECOS
  REGION(TEXAS)---------
TRANS-2-----------------
TRANS,TRANS-1,5-CYCLOOCT
  ADIENE----------------
-TRANS?-----------------
TRANSAC-----------------
TRANSAC COMPUTER--------
TRANSACTINIDE-----------
TRANSACTINIDE ELEMENTS--
TRANSACTINIUM-----------
TRANSACTION-------------
TRANSACTION ACCOUNTING--
TRANSACTION PROCESSING--
TRANSACTION PROCESSING
  OPERATING SYSTEM------
TRANSACTIONAL-----------
```

...and many more.

```
? ss transit or transport?
          3  2700 TRANSIT
          4 36308 TRANSPORT?
          5 36801  3 OR 4
```

Imbedded variable character

The variable character symbol ? can be used within a word such as WOMAN/WOMEN

Example ss wom?n

ss organi?e?

5.5.3 Search strategy and modification

When designing your initial search strategy start with the most specific concept - the limiting aspect where you expect to find fewest references. If this results in a small or medium-sized set it may be unnecessary to carry out further combinations.

Broadening a search

If the initial search strategy results in a very small set, you may want to try and broaden your search.

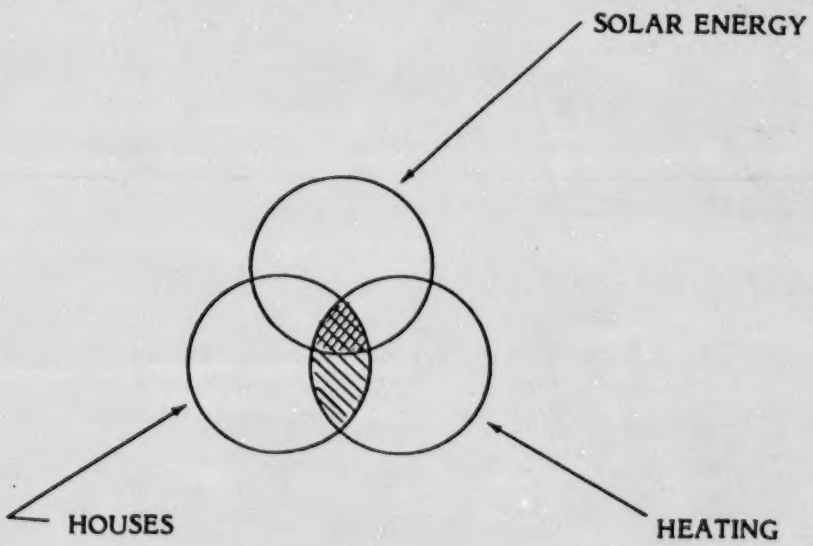
(1) Check the original terms used, have you made use of truncation and expand routines to find associated terms?

(2) Type out a few relevant references in a format which shows index terms or descriptors. This may suggest new suitable search terms.

(3) Perhaps you have tried to combine too many aspects at the same time.

Narrowing a search

If the initial search strategy results in too large a set, this can be narrowed by applying further combination parameters:



Again, typing out a number of the references together with their index terms, will indicate the possible relevance of the material obtained.

INTERACT with the computer. Do not hesitate to logoff and revise your search if necessary.

5.5.4 Search history display

During a search, particularly a long search, you may wish to review the steps that you have taken. This can be done by means of the display sets or ds command

Example

```
? DS
SET  ITEMS DESCRIPTION
  1   2994 TRANSFORMER
  2   3945 TRANSFORMER?
  3   2994 E3-E18 TRANSFORMER
  4  55385 POWER?
  5   2994  1
  6   1976  2 AND 4
  7    238 METROPOLITAN
  8   1171 URBAN
  9   1374  7 OR 8
```

5.5.5 Selecting previous sets

Previous sets may be selected by means of ss followed by a space and the set number.

Example

```
? SS S9 AND S2
          10     19  9 AND 2
```

5.5.6 Full-text searching

In the early information retrieval systems, developed in the 1960s, the records stored in the files, did not usually include abstracts, as it would have been too expensive to store this information. Searching was carried out by means of the use of descriptors or keywords assigned from a 'controlled vocabulary' structured to describe the subject area. The searcher had then to try to find out which descriptors would cover his required subject. This type of searching results in a number of potential communication barriers - the user may not find the 'right' index terms or descriptors, an indexer may have misunderstood the subject content of an article etc.

With decreasing costs for computer storage, it is now possible to store abstracts as well as bibliographic citations. The searcher can search for any stored word (with the exception of such common words as 'of' 'and' 'the' etc.). This capacity to search for words in any part of a record, leads, however, to many 'false drops', for the coexistence of two words does not necessarily imply subject linkage between them.

In full text searching it is possible to reduce the risk of 'false drops' by employing operators to indicate closeness or proximity in the text, and the sequence in which they should occur.

The (w) proximity operator requires the terms on either side of the operator to be adjacent and in the specified order.

? ss electric(w)vehicles

in this case the words electric vehicles have to be adjacent and in that order in the record

Use of a number with the w operator specifies the number of intervening words nW where n is the number of words

? ss electric(1w)vehicles

requires the words to appear in order electric ... vehicles, but allows one intervening word such as electric rail vehicles

The (f) field operator can be used to indicate that the terms should occur in the same field (such as title or abstract) but in any order.

? ss electric(f)vehicles

Use of descriptors, proximity (w) operators, field (f) operators can be used to increase precision at the expense of recall.

* Note if you use terms such as "electrical vehicles" or "digital filters" the computer will merely search for descriptors and not treat the words as linked by an 'and' operator.

```
? b 8
        20jan81 17:38:46 User3842
  $0.18  0.007 Hrs File1*
File8:COMPENDEX - 70-80/Dec
(Copr. Engineering Index Inc.)
        Set Items Description (+=OR;*=AND;-=NOT)
        --- ----- ------------------------------
? ss electric vehicles
          1    39 ELECTRIC VEHICLES

? ss electric and vehicles
          2 97761 ELECTRIC
          3 10514 VEHICLES
          4  1532  2 AND 3
```

• *Terms may appear anywhere in record*

```
1057559 /7
  1057559    ID NO.- EI800857559
  ELECTRIC AUTOMOBILES. VOLUME 2. 1975-AUGUST, 1979 (CITATIONS
 ROM THE ENGINEERING INDEX DATA BASE).
  Hundemann, Audrey S. (Ed. )
  NTIS, Springfield, Va
  NTISearch  NTIS/PS-79/0991/4EES,  Search  period  covered:
 975-Aug 1979.  Publ by NTIS,  Springfield,  Va,  Sep 1979.
Available from NTIS 279 p  CODEN: NTISDZ
  Citations from worldwide research literature cover the design
of electric automobiles, vans, buses, and hybrid vehicles.
Studies are included on lead-acid, zinc-air, lithium-sulfur, and
nickel-cadmium batteries;  fuel cells;  drive trains;  and
chassis construction. This updated bibliography was prepared by
searching the 1975-August 1979 data base of Engineering Index.
It contains 279 abstracts, 75 of which are new entries to the
previous edition.
```

```
? ss electric(w)vehicles
          5   300 ELECTRIC(W)VEHICLES
```

• *W operator requires adjacency and specified order of terms*

```
1079092 /7
  1079092    ID NO.- EI801079092
  COMPARISON  OF  METAL-AIR  BATTERIES  FOR  ELECTRIC  VEHICLE
PROPULSION.
  Bryant, W. A.; Buzzelli, E. S.
  Westinghouse Electr Corp, Pittsburgh, Pa
  Proc Intersoc Energy Convers Eng Conf  14th, v 1, Boston, Mass,
Aug 5-10 1979.  Publ by Am Chem Soc, Washington, DC, 1979.  Also
available from IEEE (Cat n 79CH1477-9 ENERGY), Piscataway, NJ p
651-653  CODEN: PIECDE
  A comparison is made among four metal-air systems being
 onsidered for future use in commuter electric vehicles.  The
anode materials are lithium, aluminum,  zinc and iron.  The
lithium-air system is still in an early stage of development.  A
proposed mechanically rechargeable aluminum-air system is
potentially capable of superior performance but its relative cost
of ownership and operation is expected to be high.  Several
slurry zinc-air systems are being developed which avoid the
traditional  problems  associated  with  the plate-type zinc
electrode. 1[illegible] refs.
```

? ss electric(1w)vehicles
6 347 ELECTRIC(1W)VEHICLES

• *Use of number with W, e.g. (1W), specifies maximum number of intervening words*

1013436 /7
1013436 ID NO.- EI800213436
THYRISTOR TECHNOLOGY APPLIED TO ELECTRIC LOCOMOTIVES, SUBURBAN TRAINS AND UNDERGROUND TRAINS.
Nilsson, L. O.
Allm Sven Elektr, Vasteras, Swed
Natl Conf Publ Inst Eng Aust n 79/2, Electr Energy Conf, Prepr of Pap, Brisbane, Aust, May 17-18 1979. Publ by Inst of Eng, Aust, Barton, 1979 p 25-29 CODEN: NPIEDX
This paper recounts ASEA (Allmanna Svenska Electriska) Aktiebolaget) development of electric rail vehicles up to the modern thyristor-controlled locomotives, suburban trains, underground trains and trams. Extensive tests to evaluate the energy savings of a chopper car compared to a resistor controlled car under the same conditions have been run by Melbourne and Metropolitan Tramways Board, MMTB, during 1977. These tests demonstrated that a properly designed chopper car with the ASEA system for regenerative braking may consume nearly 40% less energy than equivalent conventional cars in normal revenue service. By applying modern technology and calculation methods the design of rail vehicles it has been possible to supply the rail transportation industry with safe and energy-efficient high-performance-vehicles with improved ride and reduced maintenance.

? ss electric(f)vehicles
7 1010 ELECTRIC(F)VEHICLES

• *F operator specifies that both terms be in same field, in any order*

1079094 /7
1079094 ID NO.- EI801079094
ELECTRICITY COUNCIL REPORTS ON ENFIELD CAR.
Anon
Electr Veh v 65 n 3 Sep 1979 p 2-4 CODEN: EVBAAS
ISSN 0374-3195
In 1966 the Electricity Council embarked on an evaluation of the Enfield 8000 electric car and purchased 66 vehicles for long-term testing. Powered by eight traction batteries and one auxiliary battery, the Enfield 8000 has a 6kW series wound motor operated at 12, 24 and 48 volts. Smooth speed control is ensured by switching the two sections of the motor field winding in parallel and series at each voltage. There is no regenerative braking. There is an on-board charger for both the traction and auxiliary batteries. Maximum speed is 40 m. p. h. and the range is between 24 and 56 miles, depending on driving conditions. The car can accelerate from 0 to 30 m. p. h. in 12 $one-half$ seconds.

? ss electric(w)passenger(w)vehicle?
8 4 ELECTRIC(W)PASSENGER(W)VEHICLE?

• *W operator may be used with multiple adjacent terms, up to a total length of 50 characters*

315689 /7
315689 ID NO.- EI730315689
WPI ELECTRIC HYBRID.
Clarke, Steven A.; Sousa, Norman W.; Maymon, Kenneth; Nowak, avid
IEEE, Northeast Electronics Research & Eng Meeting, NEREM Record, Tech Application Papers, v 12, 1970, New York, p 40-41
An electric passenger vehicle with battery charging facilities on board to provide extended driving range is described. The batteries alone will power the vehicle in urban areas for virtually pollution free operation. On the highway an engine generator is started to provide electric power for both the drive motor and for recharging of the batteries. The engine which drives the generator is set to run at low emission levels in constant speed operation, and the load on the generator is kept nearly constant by allowing the batteries to drain during periods of large power demand by the drive motor and to take a charge during periods of lower power demand.

? ss electric(w)vehicle?(f)cost
9 66 ELECTRIC(W)VEHICLE?(F)COST

• *W must appear in leftmost position when used in same search statement with F*

1071447 /7
1071447 ID NO.- EI800971447
ELECTRIC VEHICLE AC DRIVE DEVELOPMENT.
Plunkett, A. B.; Kliman, G. B.
GE, USA
SAE Prepr n 800061 for Meet Feb 25-29 1980 15 p CODEN: SEPPA8
An improved drive system, which will result in lighter weight, higher efficiency and lower cost for an electric vehicle, is being developed. A study evaluating the suitability of alternative motor and power converter technologies for electric vehicle application was performed. The results indicate that an ac induction motor with a transistor inverter has the greatest potential. Not only will this drive system provide greater vehicle range, but it will also provide improved regeneration to the battery. 9 refs.

RECALL AND PRECISION

```
? b 8
        30jan81 13:01:09 User3842
  $0.15  0.006 Hrs File1*
File8:COMPENDEX - 70-81/Jan
(Copr. Engineering Index Inc.)
        Set Items Description (+=OR;*=AND;-=NOT)
        --- ----- ------------------------------
? ss electric vehicles
          1    39 ELECTRIC VEHICLES

? ss electric(w)vehicles/de,id
          2    45 ELECTRIC(W)VEHICLES/DE,ID

? ss electric(w)vehicles/ti
          3   114 ELECTRIC(W)VEHICLES/TI

? ss electric(w)vehicle?
          4   444 ELECTRIC(W)VEHICLE?

? ss electric(1w)vehicle?
          5   509 ELECTRIC(1W)VEHICLE?

? ss electric?(f)vehicle?
          6  1548 ELECTRIC?(F)VEHICLE?

? ss electric? and vehicle?
         7117177 ELECTRIC?
         8 16216 VEHICLE?
         9  2244  7 AND 8

? ss electri? and vehic?
        10117382 ELECTRI?
        11 16708 VEHIC?
        12  2302  10 AND 11
```

HIGH PRECISION, LOW RECALL

LOW PRECISION, HIGH RECALL

5.5.7 Transferring search from database to database

It is possible to save a given search formulation and use it on another database or file. This allows rapid entry of the search strategy and saves time. (Note: allowance must be made for differences in database construction). In order to save a search temporarily as for database transfer use the end/savetemp command.

Example

```
? end/savetemp
 Serial#T4C0 (T-4-C-ZERO)
          21may81 17:39:35 User17419
  $2.49  0.166 Hrs File8 9 Descriptors
```

Specific search number

Your search will be assigned a specific number beginning with T ...

This search strategy can then be used by means of the command .execute steps or .exs and a space and the serial number on other databases.

Example

```
? b 69
          21may81 16:37:00 User17419
  $0.11  0.007 Hrs File1*
File69:ENERGYLINE - 71-81/May
(Copr. EIC Inc.)
          Set Items Description
          --- ----- -----------
? ss solar energy conversion and chemical
            1    54 SOLAR ENERGY CONVERSION
            2  1771 CHEMICAL
            3     7  1 AND 2


? t3/2/1-7
3/2/1
  115301   *78-023665
  SOLAR ELECTRICITY PRODUCTION,
  KETTANI M. ALI
  UNIV OF PETROLEUM AND MINERALS, SAUDI ARABIA,
  PRESENTED  AT  UNIV OF MIAMI CLEAN ENERGY RESEARCH INST INTL SYM ON SOLAR
ENERGY, CAIRO, JUN 16-22, 78, P373 (21)
  DESCRIPTORS:  *SOLAR ENERGY CONVERSION ;   *SOLAR  CELLS  ;   *THERMIONIC
CONVERSION ; *THERMOELECTRIC CONVERSION ; *PUMPED STORAGE ; *THERMOCHEMICAL
PROCESSES ; *SOLAR CELLS, SILICON ; *ECONOMICS, SOLAR ENERGY ; CONF PAPER
  REVIEW CLASSIFICATION: 10
```

New database - NTIS (file 6)

```
? b6;.exs t4af
        21may81 16:45:31 User17419
  $0.68  0.045 Hrs File8
File6:NTIS - 64-81/Iss12
(Copr. NTIS)
        Set Items Description
        --- ----- -----------
          1   786 SOLAR ENERGY CONVERSION
          2 43321 CHEMICAL
          3    48  1 AND 2
? t3/8/1-10
3/8/1
DOE/CS/21051-01   NTIS Prices: PC A02/MF A01

Fuels and Chemicals Made from Solar Energy. Options for the 1990's and
Beyond

Descriptors:   *Chemical feedstocks, *Chemical industry, *Fuels,
*Thermochemical processes, Ammonia, Biomass, Coal, Feasibility studies,
Forecasting, Fuel gas, High temperature, Hydrogen production, Production,
Shale oil, Solar energy conversion, Solar furnaces, Solar process heat,
Styrene, Very high temperature

Identifiers: ERDA/140905, ERDA/140505, ERDA/299001, NTISDE
```

New database - COMPENDEX (file 8)

```
? b8;.exs t4af
        21may81 16:51:20 User17419
  $1.47  0.098 Hrs File6 2 Descriptors
File8:COMPENDEX - 70-81/May
(Copr. Engineering Index Inc.)
        Set Items Description
        --- ----- -----------
          1    15 SOLAR ENERGY CONVERSION
          2 57556 CHEMICAL
          3     5  1 AND 2
? t3/8/1-5
3/8/1
   1047966   ID NO.- EI800647966
  PRINCIPLES OF PHOTOELECTROCHEMICAL, SOLAR ENERGY CONVERSION.
  DESCRIPTORS:   *SOLAR ENERGY, PHOTOELECTRICITY, (CHEMICAL REACTIONS,
    Photochemical Reactions),
  IDENTIFIERS: PHOTOELECTROCHEMICAL DEVICES, SOLAR ENERGY CONVERSION
  CARD ALERT: 615, 657, 701
```

The temporary search save allows you to store a search for a period of one day. This means that it is possible to logoff for a short period of time, to think about the results of a search, consult search aid tools, plan possible modifications, then log-on and enter the previous strategy in one step and continue the search.

5.5.8 Logoff

The logoff command is used to conclude online activities. It is the final sign-off that disconnects you from the DIALOG computer and ends the accounting programme.

Example

```
? logoff
        21may81 18:06:33 User17419
  $1.32  0.088 Hrs File34 1 Descriptor

LOGOFF 18:06:34

415 48 DISCONNECTED 00:01:30:29 916 146
```

Possibly you may wish to interrupt your search for a short while to think about your continued search strategy, to consult a search aid tool etc. you may then use the logoff hold command which ensures that your search will be stored for 10 minutes. If you dial-up again within the 10-minute period, you will receive a RECONNECT message, this indicates that your work has been kept.

Example

```
? logoff hold

? LOGOFF HOLD

        16OCT81 2:42:09 USER3926
  $0.00  0.191 HRS FILE13 17 DESCRIPTORS

LOGOFF 2:42:10
```

6. THE AUTHOR SEARCH

If you know that a particular author is very active in your field, a good searching strategy might be to carry out an author search and find out how these articles are indexed. These terms could then form the basis for a subject search.

In order to carry out an author search, it is necessary to use the prefix field au =. As there can be many ways of recording and entering an author's name, it is adviseable to start with expanding the author's name.

Example

```
? e au=fjallbrant,
Ref   Index-term                Type Items RT
E1    AU=FIZET, M.-------------        1
E2    AU=FIZGEER, B.M.---------        1
E3    AU=FIZIEV, P.P.----------        1
E4    AU=FJAER, E.-------------        5
E5    AU=FJAESTAD, B.----------        1
E6   -AU=FJALLBRANT,----------
E7    AU=FJALLBRANT, N---------        1
E8    AU=FJALLBRANT, N.--------       12
E9    AU=FJALLBRANT, T.--------        4
E10   AU=FJELD, M.-------------        5
E11   AU=FJELD, R.A.-----------        3
E12   AU=FJELDBO, G.-----------        3
E13   AU=FJELDLV, T.-----------        1
E14   AU=FJELDLY, T.A.---------        4
E15   AU=FJELDSTED, T.P.------        1
E16   AU=FJELLHEIM, R.---------        1
E17   AU=FJELLHEIM, R.A.-------        1
E18   AU=FJELSTED, K.----------        1
E19   AU=FJODOROV, A.M.--------        1
E20   AU=FJODOROV, P.P.--------        1
                                   -more-
? s e9
          11      4 AU=FJALLBRANT, T.
11/5/2
  288051   A79081648, B79043342, C79031005
  DATA REDUCTION OF SAMPLED SPEECH SIGNALS' METHOD AND RESULTS
  FJALLBRANT, T.
  DEPT. OF ELECTRICAL ENGNG., LINKOPING UNIV., LINKOPING, SWEDEN
  INT. J. ELECTRON. (GB)    VOL.46, NO.4   401-12   APRIL 1979   Coden:
IJELA2
  Treatment: NEW DEVELOPMENTS
  Document Type: JOURNAL PAPER
  (14 Refs)
  A METHOD FOR DATA REDUCTION IN THE TRANSMISSION OF SPEECH SIGNALS IS
DESCRIBED, WHICH IS BASED ON A NEW PROCEDURE FOR THE EXTRAPOLATION OF
SHORT-TIME STATIONARY SIGNALS. AN EXAMPLE OF THE RECONSTRUCTION NETWORK HAS
BEEN SIMULATED ON A MINICOMPUTER PROVIDED WITH AN ADDITIONAL TAPE MEMORY.
DIGITAL SPEECH SIGNALS, STORED IN THE TAPE MEMORY, HAVE BEEN PROCESSED IN
THE SIMULATED SYSTEM AND RESTORED AND LISTENED TO IN REAL TIME. THIS
RECONSTRUCTED SOUND IS OF VERY GOOD QUALITY COMPARED WITH THE ORIGINAL
SIGNAL. IN COMPARISON WITH THE VOCODER SYSTEMS, VERY LITTLE HARDWARE IS
REQUIRED. CLOSE SIMILARITY BETWEEN THE ORIGINAL AND RECONSTRUCTED SPEECH
SIGNAL HAS ALSO BEEN SHOWN TO EXIST IN SHORT-TIME ANALYSIS OF THE SIGNALS
IN BOTH THE TIME AND FREQUENCY DOMAINS.
  Descriptors: SPEECH SYNTHESIS; DATA REDUCTION AND ANALYSIS; DIGITAL
SIGNALS; COMPUTERISED SIGNAL PROCESSING
  Identifiers: DATA REDUCTION; TRANSMISSION; SPEECH SIGNALS; RECONSTRUCTION
NETWORK; SIMULATED; SOUND; SHORT TIME STATIONARY SIGNALS; DIGITAL SIGNALS
  Class Codes: A4370; B6130; C7410F
```

7. THE CORPORATE SOURCE SEARCH

It is possible to search for articles published by a given organisation or institution (corporate source) by the use of the CS = prefix.

Example

Find an article published by Chalmers University of Technology.

As Chalmers can have been recorded in many forms e.g. Chalmers University, Chalmers Institute of Technology, it is adviseable to begin by using the expand command.

```
? E CS=CHALMER?

REF ITEMS  INDEX-TERM
E1      3  CS=CHALK RIVER NUCLEAR
             LABS., CHALK RIVER,
E2      1  CS=CHALMER
E3        ◆CS=CHALMER?
E4    636  CS=CHALMERS
E5      1  CS=CHALMERS INST. OF
             TECHNOL., GOTEBORG, S
E6      1  CS=CHALMERS TECHNOL.
             INST., GOTEBORG, SWED
E7      1  CS=CHALMERS TEKNISKA
             HOGSKOLAS BIBLIOTEK,
                                   -MORE-
? P

REF ITEMS  INDEX-TERM
E8      1  CS=CHALMERS UNIV. OF
             TECHNOL. LIBRARY , GO
E9      1  CS=CHALMERS UNIV. OF
             TECHNOL. LIBRARY IN G
E10     1  CS=CHALMERS UNIV. OF
             TECHNOL., FACK, SWEDE
E11    22  CS=CHALMERS UNIV. OF
             TECHNOL., GOTEBORG, S
E12     1  CS=CHALMERS UNIV. OF
             TECHNOL., GOTEBURG, S
E13     1  CS=CHALMERS UNIV. OF
             TECHNOL., GOTENBURG,
                                   -MORE-
? P

REF ITEMS  INDEX-TERM
E14     2  CS=CHALMERS UNIV. OF
             TECHNOL., GOTHENBURG,
E15     2  CS=CHALMERS UNIV. OF
             TECHNOL., GOTHENBURG,
E16     3  CS=CHALMERS UNIV. OF
             TECHNOL., GOTHENBURG,
E17     6  CS=CHALMERS UNIV. OF
             TECHNOL., GOTHENBURG,
E18     5  CS=CHAM
E19     1  CS=CHAM LTD., LONDON,
             ENGLAND
                                   -MORE-

? S E4-E17

          1    636 E4-E17
                 E3: CS=CHALMER?
```

? T1/3/1

1/3/1
615973 A81087342
THE SYNTHESIS AND CRYSTAL GROWTH OF TE(OH)/SUB 6/.4H/SUB 2/O
FALCK, L.; LINDQVIST, O.; MORET, J.; RIBET, J.L.
DEPT. OF INORGANIC CHEM., CHALMERS UNIV. OF TECHNOL., GOTEBORG, SWEDEN
J. CRYST. GROWTH (NETHERLANDS) VOL.53, NO.2 280-2 MAY 1981 CODEN: JCRGAE

? SS S1 AND FILTER?

2 13389 FILTER?
3 6 1 AND 2

? T3/5/1

3/5/1
600660 A81077288, B81037466, C81025172
QD-AN ALGORITHM FOR NON-LINEAR INVERSE FILTERING
HEDELIN, P.; HULT, G.
DEPT. OF INFORMATION THEORY, CHALMERS UNIV. OF TECHNOL., GOTEBORG, SWEDEN
SPONSOR: IEEE
ICASSP 81. PROCEEDINGS OF THE 1981 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING 366-9 VOL.1 1981
30 MARCH - 1 APRIL 1981 ATLANTA, GA, USA
PUBL: IEEE, NEW YORK, USA
3 VOL. 1291 PP.
TREATMENT: THEORETICAL
DOCUMENT TYPE: REPORT SECTION
(10 REFS)
A SIGNAL MODEL BASED ON AN ASSUMPTION OF UNIFORM DISTRIBUTIONS LEADS TO A SIMPLE NON-LINEAR ALGORITHM FOR PARAMETER ESTIMATION. THE QD ALGORITHM CAN BE APPLIED TO ADAPTIVE INVERSE FILTERING OF SPEECH SIGNALS. THE TECHNIQUE USED IS TO ESTIMATE SEQUENTIALLY THE REFLECTION COEFFICIENTS OF A LATTICE STRUCTURE. SOME RESULTS OF ONE SUCH APPLICATION ARE DISCUSSED AND COMPARED WITH THOSE OBTAINED BY OTHER METHODS.
DESCRIPTORS: SPEECH ANALYSIS AND PROCESSING; FILTERING AND PREDICTION THEORY; PARAMETER ESTIMATION
IDENTIFIERS: SIGNAL MODEL; UNIFORM DISTRIBUTIONS; PARAMETER ESTIMATION; ADAPTIVE INVERSE FILTERING OF SPEECH SIGNALS; REFLECTION COEFFICIENTS; LATTICE STRUCTURE; NONLINEAR ALGORITHM
CLASS CODES: A4370; A4360; B6130; B6140; C1260

8. CITED REFERENCE SEARCHES

Science Citation Index is available for searching online in the DIALOG system. SCI is stored in files

34	1974 - 1977
94	1978 -

It can be very useful to follow up citations to a 'key' relevant reference in your subject field. For this purpose you can make use of the appropriate SCI Search files 34 or 94. As the author's name can be entered in a variety of forms, it is adviseable to start with an expansion. The prefix cr = indicates cited reference.

Example

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? E CR=WALLMAN H
REF   INDEX-TERM              TYPE ITEMS RT
E1    CR=WALLKES TP, 1959,
        V53, P824-------------       1
E2    CR=WALLLACE DD, 1971;
        V27, P1262------------       2
E3    CR=WALLMAN AA, 1961,
        V98, P116-------------       1
E4    CR=WALLMAN AA, 1968,
        V98, P1013------------       4
E5    CR=WALLMAN DR, 1973,
        V7, P355--------------       1
E6   -CR=WALLMAN H------------
E7    CR=WALLMAN H, 1859, V1,
        P20-------------------       1
E8    CR=WALLMAN H, 1938, P687       1
E9    CR=WALLMAN H, 1938,
        V39, P112-------------       5
E10   CR=WALLMAN H, 1938,
        V42, P687-------------       3
E11   CR=WALLMAN H, 1938,
        V89, P112-------------       1
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? P
REF   INDEX-TERM              TYPE ITEMS RT
E12   CR=WALLMAN H, 1941,
        V42, P687-------------       2
E13   CR=WALLMAN H, 1948------       1
E14   CR=WALLMAN H, 1966, V5,
        P562------------------       2
E15   CR=WALLMAN H, 1972------       1
E16   CR=WALLMAN IS, 1955,
        V1, P1105-------------       1
E17   CR=WALLMAN IS, 1955,
        V2, P1423-------------       1
E18   CR=WALLMAN IS, 1956,
        V2, P488--------------       1
E19   CR=WALLMAN IS, 1957,
        V2, P903--------------       1
E20   CR=WALLMAN IS, 1957,
        V32, P149-------------       1
E21   CR=WALLMAN IS, 1961,
        V2, P532--------------       1
E22   CR=WALLMAN IS, 1961,
        V48, P668-------------       1
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? S E7-E15
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                   E6: CR=WALLMAN H
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  $3.63  0.066 Hrs File48 9 Descriptors
File34:SCISEARCH - 78-81/Wk04
(Copr. ISI Inc.)
See file 94(74-77)
        Set Items Description (+=OR;*=AND;-=NOT)
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? e cr=einstein a
Ref   Index-term                Type Items RT
E1    CR=EINSPRUCH NG, 1964,
        V35, P560-------------       2
E2    CR=EINSPRUCH NG, 1965,
        V17--------------------      1
E3    CR=EINSPRUCH NG, 1965,
        V17, P217-------------       1
E4    CR=EINST J, 1943, V28,
        P349-------------------      1
E5    CR=EINSTEIN-------------       3
E6   -CR=EINSTEIN A-----------       9
E7    CR=EINSTEIN A, P116-----       1
E8    CR=EINSTEIN A, P37------       1
E9    CR=EINSTEIN A, P58------       1
E10   CR=EINSTEIN A, P85------       1
E11   CR=EINSTEIN A, V1, P67--       1
E12   CR=EINSTEIN A, V105, P85       1
E13   CR=EINSTEIN A, V18, P148       1
E14   CR=EINSTEIN A, V20, P627       1
E15   CR=EINSTEIN A, 1901,
        V4, P513--------------       2
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? ss cr=einstein a? and relativity
          1   962 CR=EINSTEIN A?
          2   468 RELATIVITY
          3    63  1 AND 2

? t3/3/1-3
3/3/1
1732066  OATS ORDER#: KV193  7 REFS
  DOES THE FIZEAU EXPERIMENT REALLY TEST SPECIAL RELATIVITY  (ENGLISH)
  CLEMENT G
  UNIV CONSTANTINE,DEPT PHYS/CONSTANTINE//ALGERIA/
  AMERICAN JOURNAL OF PHYSICS , V48, N12, P1059-1062, 1980

3/3/2
1732043  OATS ORDER#: KV068  14 REFS
  COORDINATE-DEPENDENT 3 + 1 FORMULATION OF THE GENERAL-RELATIVITY EQUATION
OF MOTION  (ENGLISH)
  NELSON RA
  BYRAM HILLS SCH/ARMONK//NY/10504
  GENERAL RELATIVITY AND GRAVITATION , V12, N5, P399-404, 1980

3/3/3
1717949  OATS ORDER#: KU756  7 REFS
  EXPERIMENTAL RELATIVITY  (ENGLISH)
  KANTOR W
  PHYSICS TODAY , V33, N11, P15, 1980
```

9. EXAMPLES OF SEARCHES

1. Subject search

Find information about programmable pocket calculators.

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? b13
        27feb81 19:29:30 User3229
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File13:INSPEC - 78-81/Iss04
(Copr. IEE)
See file 12(1969 thru 1977)
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? ss programmable? and pocket? and calculat?
          1  2353 PROGRAMMABLE?
          2   456 POCKET?
          3 63335 CALCULAT?
          4   103  1 AND 2 AND 3

? t4/3/1-4
4/3/1
  504000   C81006208
  TI-59 COMPUTES THE SEATS IN THE BUNDESTAG
  SCHLIERBACH, M.
  FUNKSCHAU (GERMANY)     VOL.52,   NO.20   85-6   26 SEPT. 1980   Coden:
FUSHA2

4/3/2
  502733   C81004884
  1973-1980,   FROM ADDING MACHINE TO COMPUTER SYSTEM.   HOW A POCKET
CALCULATOR WORKS
  CHIP (GERMANY)   NO.11   54-6   NOV. 1980   Coden: CHIPDP

4/3/3
  487254   C81000280
  HOW TO PLAY AT WINNING BLACKJACK USING A PROGRAMMABLE POCKET CALCULATOR
  GUTTMANN, H.; STADLER, H.
  TECH. UNIV. WIEN, WIEN, AUSTRIA
  BARRITT, M.M.; WISHART, D. (Editors)
  COMPSTAT 1980. PROCEEDINGS IN COMPUTATIONAL STATISTICS   368-74   1980
  1980   EDINBURGH, SCOTLAND
  Publ: PHYSICA-VERLAG,    WIEN, AUSTRIA
  632 pp.   ISBN 3 7908 0229 8

4/3/4
  487070   B81000031, C81000087
  USING PROGRAMMABLE CALCULATORS IN QUALITY CONTROL-TUTORIAL
  BERGER, R.W.; HALE, M.
  IOWA STATE UNIV., AMES, IA, USA
  AMERICAN SOCIETY FOR QUALITY CONTROL 34TH ANNUAL TECHNICAL CONFERENCE
TRANSACTIONS   1-9   1980
  20-22 MAY 1980   ATLANTA, GA, USA
  Publ: AMERICAN SOC. QUALITY CONTROL, INC.,    MILWAUKEE, WI, USA
  XXIX+837 pp.
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2. **Free text searching**

Find information on digital filters

Note effect of using field (f) and proximity (w) operators

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? begin 13
        15Jul81 18:04:00 User17419
  $0.44  0.029 Hrs File13 7 Descriptors
File13:INSPEC - 78-81/Iss14
(Copr. IEE)
See file 12(1969 thru 1977)
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? ss digital and filter?
           1 23323 DIGITAL
           2 12418 FILTER?
           3  2550  1 AND 2
? ss digital(f)filter?
           4  2401 DIGITAL(F)FILTER?
? ss digital(w)filter?
           5   584 DIGITAL(W)FILTER?
? ss digital filter
           6    24 DIGITAL FILTER
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Find information about solar heating of schools

```
? ss solar heating and school?
          17     5 SOLAR HEATING
          18  2063 SCHOOL?
          19     1  17 AND 18
? t19/5/1
19/5/1
   1108343   ID NO.- EI810108343
  INDIVIDUAL  LOAD  CENTER  $EM DASH$  SOLAR HEATING AND COOLING COMMERCIAL
PROJECT.  DETAILED DESIGN ACTIVITIES (PHASE 2).
  Anon
  Arthur D.  Little Inc, Cambridge, Mass
  Electr Power Res Inst Rep EPRI EM  1363 Mar  1980  var pagings    CODEN:
EPEMD6
  This report describes the design data for solar systems in six commerical
buildings, both new and retrofit applications.  The six buildings included
offices, schools, a credit union, and a delicatessen.  Through the detailed
design effort,  these preliminary renderings were carried to the stage  of
drawings and specifications suitable for inclusion in a bid package.  Most
of the detailed design effort was spent performing  parametric  studies  of
system performance.  12 refs.
  DESCRIPTORS: (*SOLAR ENERGY, *Energy Utilization),
  IDENTIFIERS: SOLAR HEATING
  CARD ALERT: 615, 657
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? ss solar(f)heat? and school?
          11  4147 SOLAR(F)HEAT?
          12  2063 SCHOOL?
          13    61  11 AND 12
? ss solar(w)heat? and school?
          14  1265 SOLAR(W)HEAT?
          15  2063 SCHOOL?
          16    41  14 AND 15
? t16/8/1-5
16/8/1
   1108343   ID NO.- EI810108343
  INDIVIDUAL  LOAD  CENTER  $EM DASH$  SOLAR HEATING AND COOLING COMMERCIAL
PROJECT.  DETAILED DESIGN ACTIVITIES (PHASE 2).
  DESCRIPTORS: (*SOLAR ENERGY, *Energy Utilization),
  IDENTIFIERS: SOLAR HEATING
  CARD ALERT: 615, 657

16/8/2
   1060345   ID NO.- EI800860345
  SOLAR  SPACE  HEATING  AND  AIR  CONDITIONING.    VOLUME  3.  SEPTEMBER,
1977-OCTOBER, 1979 (CITATIONS FROM THE ENGINEERING INDEX DATA BASE).
  DESCRIPTORS: (*HEATING, *Solar), (AIR CONDITIONING, Solar Energy Systems)
, SOLAR ENERGY, HEAT PUMP SYSTEMS,
  IDENTIFIERS: BIBLIOGRAPHIES
  CARD ALERT: 643, 615, 657



? ss solar? and heat?
          6 13055 SOLAR?
          7 84250 HEAT?
          8  4374  6 AND 7
? ss school?
          9  2063 SCHOOL?
? c 8 and 9
         10    61  8 AND 9
? t10/6/1-5
10/6/1
   1127614   ID NO.- EI810327614
  REPORT  ON  FIVE  YEARS  OF OPERATING EXPERIENCE WITH FOUR PIONEER SCHOOL
HEATING EXPERIMENTS.
  Sun 2, Proc of the Int Sol Energy Soc Silver Jubilee Consr, Atlanta,  Ga,
May 1979 v 1.  Publ by Persamon Press, Elmsford, NY and Oxford, Engl,  1979
p 919-923

10/6/2
   1123870   ID NO.- EI810323870
  DESIGN  AND INITIAL PERFORMANCE OF THE SOLARIUM-ASSISTED DORMITORY AT THE
WHITE MOUNTAIN SCHOOL, LITTLETON, N. H.
  Sun 2, Proc of the Int Sol Energy Soc Silver Jubilee Consr, Atlanta,  Ga,
May 1979 v 2.  Publ by Persamon Press, Elmsford, NY and Oxford, Engl,  1979
p 1689-1693

10/6/3
   1123828   ID NO.- EI810323828
  CONSTRUCTION COST FACTORS IDENTIFIED IN COMMERCIAL SOLAR ENERGY SYSTEMS.
  Proc of the US Dep of Energy's Res Sol Updates, Dearborn, Mich; Orlando,
Fla; Philadelphia, Pa; Los Angeles, Calif, Jul-Aug 1979 vol 1.  Sponsored
by DOE, Off of Sol Appl (CONF-790758), Washington, DC, 1979.  Available
from NTIS, Springfield, Va p 231-256
```

3. Search transfer from database to database

Find the latest information on detectors used for luggage

```
? b6
        27feb81 19:57:21 User3229
  $0.76  0.019 Hrs File6 6 Descriptors
File6:NTIS - 64-81/Iss06
(Copr. NTIS)
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? ss luggage? or baggage or suitcase? or suit(w)case? or purse?
          1     1 LUGGAGE?
          2    21 BAGGAGE
          3     4 SUITCASE?
          4     0 SUIT(W)CASE?
          5    19 PURSE?
          6    45  1 OR 2 OR 3 OR 4 OR 5
? ss xray? or x(w)ray? or detect? or sensor? or sensing or inspect?

          7    15 XRAY?
          8 10159 X(W)RAY?
          9 24123 DETECT?
         10  6457 SENSOR?
         11  4534 SENSING
         12  6621 INSPECT?
         13 47874  7 OR 8 OR 9 OR 10 OR 11 OR 12
? c 6 and 13
         14     7  6 AND 13
? t14/6/1-3
14/6/1
SAND-79-0679   NTIS Prices: PC A03/MF A01
  Laboratory Evaluation of Two X-Ray Baggage Inspection Systems
  Jun 79   47p

14/6/2
LA-7108   NTIS Prices: PC A02/MF A01
  Neutron Detector Suitcase for the Nuclear Emergency Search Team
  Feb 78   8p

14/6/3
PB-274 202/1ST   NTIS Prices: PC A02/MF A01
  Documented Personnel Exposures from Airport Baggage Inspection Systems
  Oct 76   16p

? end/savetemp
Serial#T54C
        27feb81 19:59:44 User3229
  $1.56  0.039 Hrs File6 13 Descriptors
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? b13
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(Copr. IEE)
See file 12(1969 thru 1977)
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          2     6 BAGGAGE
          3     2 SUITCASE?
          4     0 SUIT(W)CASE?
          5     4 PURSE?
          6    17  1 OR 2 OR 3 OR 4 OR 5
          7     4 XRAY?
          8 16542 X(W)RAY?
          9 25176 DETECT?
         10  4051 SENSOR?
         11  3140 SENSING
         12  2017 INSPECT?
         13 46508  7 OR 8 OR 9 OR 10 OR 11 OR 12
         14     6  6 AND 13

? t14/6/1-3
14/6/1
  466238   C80033482
  EXPLOSIVES DETECTION BY DUAL-ENERGY COMPUTED TOMOGRAPHY (CT)

14/6/2
  459878   B80050980
  ACCESS CONTROL ELECTRONIC SYSTEMS'  X-RAY SCREENING,  METAL AND EXPLOSIVE
DETECTORS

14/6/3
  410213   A80058022, B80031941, C80020932
  A MICROPROCESSOR-CONTROLLED PORTABLE NEUTRON SPECTROMETER
```

4. Corporate source and subject search

Find articles on speech synthesis published from Bell Laboratories

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? ss cs=bell lab? and speech synthe?
          7  2128 CS=BELL LAB?
          8   377 SPEECH SYNTHE?
          9     4  7 AND 8
? t9/3/1-4
9/3/1
  445679   B80044982
  A PHONETIC DICTIONARY FOR DEMISYLLABIC SPEECH SYNTHESIS
  MACCHI, M.J.
  BELL LABS., MURRAY HILL, NJ, USA
  SPONSOR: IEEE
  ICASSP 80 PROCEEDINGS. IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH
AND SIGNAL PROCESSING   565-7   1980
  Part II   9-11 APRIL 1980   DENVER, CO, USA
  Publ: IEEE,    NEW YORK, USA
  377 pp.

9/3/2
  335439   A80019168
  SPEECH  SYNTHESIS  BY LINEAR INTERPOLATION OF SPECTRAL PARAMETERS BETWEEN
DYAD BOUNDARIES
  SHADLE, C.H.; ATAL, B.S.
  BELL LABS., MURRAY HILL, NJ, USA
  J. ACOUST. SOC. AM. (USA)   VOL.66,  NO.5   1325-32   NOV.  1979   Coden:
JASMAN

9/3/3
  332617   B80003906, C80005133
  A VERSATILE HARDWARE DIGITAL FILTER
  ALLES, H.G.; FISCHER, W.C.
  BELL LABS., MURRAY HILL, NJ, USA
  TRANTER, W.H. (Editors)
  SPONSOR: NAT. ENGNG. CONSORTIUM INC.
  PROCEEDINGS OF THE NATIONAL ELECTRONICS CONFERENCE, VOL.32   352-7   1978
  16-18 OCT. 1978   CHICAGO, IL, USA
  Publ: NAT. ENGNG. CONSORTIUM INC.,    OAK BROOK, IL, USA
  XIII+374 pp.

9/3/4
  321066   B80005757
  STATISTICAL PROPERTIES OF AN LPC DISTANCE MEASURE
  TRIBOLET, J.M.; RABINER, L.R.; SONDHI, M.M.
  BELL LABS., MURRAY HILL, NJ, USA
  IEEE TRANS. ACOUST., SPEECH AND SIGNAL PROCESS. (USA)   VOL.ASSP-27, NO.5
   550-8   OCT. 1979   Coden: IETABA
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5. Corporate source and subject search

Find an article published by A Gersho whilst working at Bell Laboratories

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? s cs=bell lab?
             4  2128 CS=BELL LAB?
? ss s4 and au=gersho?
             5    17 AU=GERSHO?
             6     1  4 AND 5
? t6/5/1
6/5/1
  283768   B79043292, C79025655
  ASYMPTOTICALLY OPTIMAL BLOCK QUANTIZATION
  GERSHO, A.
  BELL LABS., MURRAY HILL, NJ, USA
  IEEE  TRANS.  INF.  THEORY (USA)    VOL.IT-25,  NO.4   373-80   JULY 1979
Coden: IETTAW
  Treatment: PRACTICAL APPLIC; THEORETICAL
  Document Type: JOURNAL PAPER
  (17 Refs)
  THE AUTHOR GIVES A HEURISTIC ARGUMENT GENERALIZING. BENNETT@S FORMULA TO
BLOCK QUANTIZATION WHERE A VECTOR OF RANDOM VARIABLES IS QUANTIZED. THE
APPROACH IS AGAIN BASED ON THE ASYMPTOTIC SITUATION WHERE THE NUMBER OF
QUANTIZED OUTPUT VECTORS, IS VERY LARGE. USING THE RESULTING HEURISTIC
FORMULA, AN OPTIMIZATION IS PERFORMED LEADING TO AN EXPRESSION FOR THE
MINIMUM QUANTIZING NOISE ATTAINABLE FOR ANY BLOCK QUANTIZER OF A GIVEN
BLOCK SIZE. THE APPROACH LEADS TO A RIGOROUS METHOD FOR OBTAINING UPPER
BOUNDS ON THE MINIMUM DISTORTION FOR BLOCK QUANTIZERS. THE IDEA OF
REPRESENTING A BLOCK QUANTIZER BY A BLOCK @COMPRESSOR@ MAPPING FOLLOWED
WITH AN OPTIMAL QUANTIZER FOR UNIFORMLY DISTRIBUTED RANDOM VECTORS IS ALSO
EXPLORED.
  Descriptors: ENCODING; ANALOGUE-DIGITAL CONVERSION; OPTIMISATION
  Identifiers: OPTIMAL BLOCK QUANTIZATION; BENNETT@S FORMULA; DISTORTION;
ADC
  Class Codes: B6110; B0260; C1260; C1180
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NEWSEARCH	211, 911
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NTIS	6 ∞
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ONTAP• CHEMNAME	231 *
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6

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NTIS is produced by the National Technical Information Service (NTIS) of the U.S. Department of Commerce, the central source for the public sale and dissemination of U.S. government-sponsored research. The database consists of government-sponsored research, development, and engineering reports as well as other analyses prepared by government agencies, their contractors, or grantees. Included in this coverage are federally generated machine-readable data files and software, U.S. Government inventions available for licensing, federally generated translations, and reports prepared by non-U.S. governments and exchanged with federal agencies. The NTIS database corresponds to several printed publications including *Government Reports Announcements & Index* (GRA&I) and twenty-six abstract newsletters such as *Government Inventions for Licensing*.

SUBJECT COVERAGE

The NTIS database includes material from both the "hard" and "soft" sciences, including topics of immediate, broad interest, such as environmental pollution and control, energy conservation, technology transfer, health planning, societal problems, and urban and regional development and planning. A representative list of the subject areas in NTIS is given below:

- Administration and Management
- Aeronautics and Aerodynamics
- Agriculture and Food
- Astronomy and Astrophysics
- Atmospheric Sciences
- Behavior and Society
- Biomedical Technology and Engineering
- Building Industry Technology
- Business and Economics
- Chemistry
- Civil Engineering
- Communication
- Computers, Control, and Information Theory
- Electrotechnology
- Energy
- Environmental Pollution and Control
- Health Planning
- Industrial and Mechanical Engineering
- Library and Information Sciences
- Materials Sciences
- Mathematical Sciences
- Medicine and Biology
- Military Sciences
- Natural Resources and Earth Sciences
- Navigation, Guidance, and Control
- Nuclear Science and Technology
- Ocean Technology and Engineering
- Physics
- Space Technology
- Transportation
- Urban and Regional Technology

SOURCES

The NTIS database represents the reports of over 300 federal government agencies.

DIALOG FILE DATA

Inclusive Dates:	1964 to the present
Update Frequency:	Biweekly (approximately 5,000 records per month)
File Size:	750,000 records as of March 1980

ORIGIN

NTIS is produced by the National Technical Information Service, U.S. Department of Commerce. Questions concerning file content should be directed to:

National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

Telephone:
General questions concerning searching: 703/487-4600

Specific questions concerning database or subject content: 703/487-4642

To order reports: 703/487-4650

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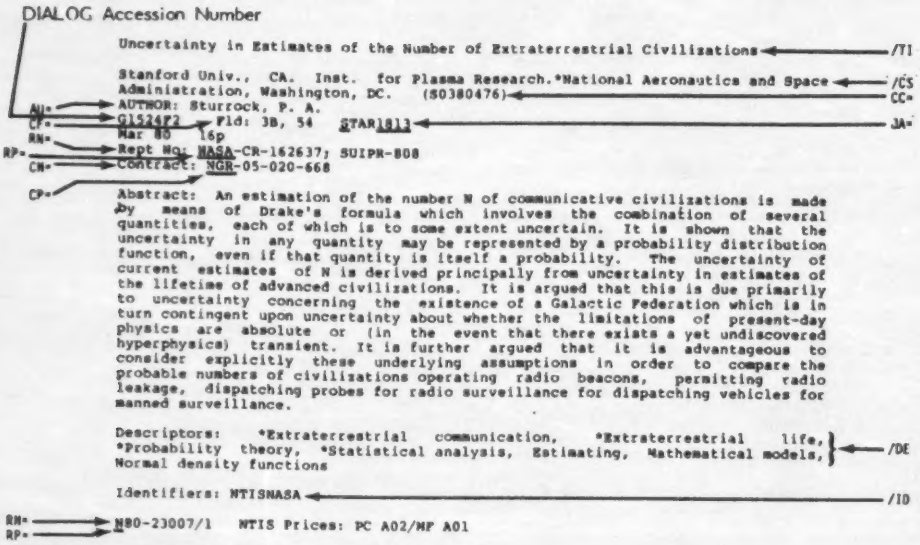
NTIS
DIALOG FILE 6

SAMPLE RECORD


DIALOG Accession Number
Uncertainty in Estimates of the Number of Extraterrestrial Civilizations /TI
Stanford Univ., CA. Inst. for Plasma Research.*National Aeronautics and Space Administration, Washington, DC. (50380476) /CS CC=
AU= AUTHOR: Sturrock, P. A.
CF= G152AF2 Fld: 3B, 54 STAR1813 JA=
RN= Mar 80 16p
RP= Rept No: NASA-CR-162637; SUIPR-808
CN= Contract: NGR-05-020-668
CP=
Abstract: An estimation of the number N of communicative civilizations is made by means of Drake's formula which involves the combination of several quantities, each of which is to some extent uncertain. It is shown that the uncertainty in any quantity may be represented by a probability distribution function, even if that quantity is itself a probability. The uncertainty of current estimates of N is derived principally from uncertainty in estimates of the lifetime of advanced civilizations. It is argued that this is due primarily to uncertainty concerning the existence of a Galactic Federation which is in turn contingent upon uncertainty about whether the limitations of present-day physics are absolute or (in the event that there exists a yet undiscovered hyperphysics) transient. It is further argued that it is advantageous to consider explicitly these underlying assumptions in order to compare the probable numbers of civilizations operating radio beacons, permitting radio leakage, dispatching probes for radio surveillance for dispatching vehicles for manned surveillance.
Descriptors: *Extraterrestrial communication, *Extraterrestrial life, *Probability theory, *Statistical analysis, Estimating, Mathematical models, Normal density functions /DE
Identifiers: NTISNASA /ID
RN= N80-23007/1 NTIS Prices: PC A02/MF A01
RP=

SEARCH OPTIONS

BASIC INDEX

PAGE	SUFFIX	FIELD NAME	EXAMPLES
6-3	None	Basic Index (Includes Corporate Source, Descriptor, Identifer, and Title)	E ESTIMATE S MATHEMATICAL(W)MODEL?
6-7	/CS	Corporate Source	S STANFORD(W)UNIV?/CS
6-3	/DE	Descriptor[1]	S PROBABILITY THEORY/DE
6-6	/ID	Identifier[2]	S NTISNASA/ID
6-3	/TI	Title	S EXTRATERRESTRIAL(W)CIVILIZATION?/TI

[1]Also /DE=, /DF, /DF=.
[2]Also /ID=, /IF, /IF=.

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
6-9	AU=	Author	E AU=GLORE	S AU=STURROCK, P. A.
6-12	CC=	Corporate Source Code	E CC=235000	S CC=50380476
6-9	CF=	Subject Category Field	E CF=9	S CF=3B?
6-12	CN=	Contract Number	E CN=AF-572	S CN=NGR-05-020-668
6-12	CP=	Contract Number Prefix	E CP=ES	S CP=NGR
6-14	JA=	Journal Announcement	E JA=D77	S JA=S1813
6A-8	LA=	Language	E LA=DUTCH	S LA=SWEDISH
6-12	RN=	Report Number	E RN=MTR-319	S RN=N80-23007/1
6-13	RP=	Report Number Prefix	E RP=MT	S RP=NASA
6-16	UD=	Update	E UD=80	S UD=9999

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLES
6-16	None	DIALOG Accession Number	LIMIT S/F0011A2-G9991A1
6-17	/MAJ	Major Descriptor or Major Identifier	LIMIT 18/MAJ
6-17	/MIN	All occurrences except Major Descriptor or Major Identifier	LIMIT 9/MIN

SORTING

PAGE	SORTABLE FIELDS	EXAMPLES
6-19	Online (.SORT) and offline (PRINT). AU, CN, CP, CS, and TI. The following fields are sortable but not searchable: AN, DT, MN.	.SORT S/1-38/AU PRINT 7/S/1-94/CS/DT,D

FORMAT OPTIONS

PAGE	NUMBER	RECORD CONTENT	NUMBER	RECORD CONTENT
6-24	Format 1	DIALOG Accession Number	Format 5	Full Record
	Format 2	Full Record except Abstract	Format 6	Title, Report Number, and Price
	Format 3	Bibliographic Citation	Format 7	Full Record except Indexing
	Format 4	Report Number, i.e., NTIS Accession (Order) Number	Format 8	Title and Indexing

DIRECT RECORD ACCESS

PAGE	PREFIX	FIELD NAME	EXAMPLES	
6-27	None	DIALOG Accession Number	TYPE D1721D2/8	PRINT G152AF2/5

NB: Page numbers refer to detailed discussions in DIALOG Database sections.

8

COMPENDEX

DIALOG INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

The COMPENDEX database is the machine-readable version of *The Engineering Index®*, which provides the engineering and information communities with abstracted information from the world's significant engineering and technological literature. COMPENDEX provides worldwide coverage of the journal literature, publications of engineering societies and organizations, papers from the proceedings of conferences, and selected government reports and books.

Summary abstracts are provided for each record. Author prepared abstracts are used when available.

SUBJECT COVERAGE

COMPENDEX is an interdisciplinary index to the world's engineering developments, including the following subject areas:

- Civil, Environmental, Geological and Biological Engineering
- Electrical, Electronics and Control Engineering
- Chemical, Agricultural and Food Engineering
- Mining, Metals, and Fuel Engineering
- Mechanical, Automotive, Nuclear and Aerospace Engineering
- Industrial and Management Applications

SOURCES

Publications from around the world are indexed, including approximately 2,000 journals, publications of engineering societies and organizations, approximately 1,000 works from conferences and symposia, technical reports, monographs, etc.

DIALOG FILE DATA

Inclusive Dates:	January 1970 to the present
Update Frequency:	Monthly (approximately 8,500 records per update)
File Size:	Approximately 915,000 records as of May 1980

ORIGIN

COMPENDEX is produced by Engineering Index (Ei), Inc. Questions concerning file content should be directed to:

Nancy F. Hardy
Communications Coordinator
Engineering Index, Inc. (Ei)
345 East 47th Street
New York, NY 10017

Telephone: 212/644-7881

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FILE 8

COMPENDEX
DIALOG FILE 8

SAMPLE RECORD

DIALOG Accession Number
906492 ID NO.- EI790106492 ←JA=
VALIDATION TEST OF DISAGGREGATE MODE CHOICE MODEL. ←/TI
AU=→Train, Kenneth
Cambridge Syst, Inc, Berkeley, Calif ←/CS
Transp Res v 12 n 3 Jun 1978 p 167-174 CODEN: TRREBK ←CO=
A model of work trip mode choice was developed on a sample of workers taken before Bay Area Rapid Transit (BART) opened for service. Validation tests of the model were performed on a sample of workers taken after BART service began. Two validation methods were used: the actual mode shares in the post-BART sample were compared to the mode shares predicted by the models estimated on the pre-BART sample, and the parameters of models estimated on the post-BART sample were compared with the parameters of the models estimated pre-BART. Three possible reasons were explored for the differences in actual and predicted shares and in the pre- and post-BART model parameters. 8 refs. ←/AB
DESCRIPTORS: (*TRANSPORTATION, *Route Analysis), MATHEMATICAL MODELS, TRAFFIC SURVEYS, ←/DE
CA=→CARD ALERT: 432, 912, 921

SEARCH OPTIONS

BASIC INDEX

PAGE	SUFFIX	FIELD NAME	EXAMPLES
8-3	None	Basic Index (Includes Abstract, Corporate Source, Descriptor, Identifier, and Title)	E VALIDATION S BART(W)SAMPLE?
8-3	/AB	Abstract	S RAPID(W)TRANSIT/AB
8-4	/CS	Corporate Source	S CAMBRIDGE(W)SYST?/CS
8-5	/DE	Descriptor	S ROUTE ANALYSIS/DE
8-7	/ID	Identifier	S FARE(W)INCENTIVE/ID
8-8	/TI	Title	S DISAGGREGATE(W)MODE/TI

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
8-9	AU=	Author	E AU=CLARK, A. H.	S AU=TRAIN, KENNETH
8-10	CA=	CAL Codes	E CA=205	S CA=432
8-11	CO=	CODEN	E CO=GECIA	S CO=TRREBK
8-11	JA=	Journal Announcement	E JA=7803	S JA=7901
8-11	SN=	International Standard Serial Number (ISSN)[1]	E SN=0301-7516	S SN=0584-9632
8-11	UD=	Update	E UD=7912	S UD=9999

[1]Beginning 1978.

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLES
8-12	None	DIALOG Accession Number	LIMIT 4/800001-1099999
8-13	/MAJ	Major Heading or Major Subheading	LIMIT 18/MAJ
8-13	/MIN	All Occurrences except Major Heading or Major Subheading	LIMIT 18/MIN

FORMAT OPTIONS

PAGE	NUMBER	RECORD CONTENT	NUMBER	RECORD CONTENT
8-18	Format 1	DIALOG Accession Number	Format 5	Full Record
	Format 2	Full Record except Abstract	Format 6	Title, Source, and Ei Abstract Number
	Format 3	Bibliographic Citation	Format 7	Bibliographic Citation and Abstract
	Format 4	Abstract and Title	Format 8	Title and Indexing

DIRECT RECORD ACCESS

PAGE	PREFIX	FIELD NAME	EXAMPLES	
8-20	None	DIALOG Accession Number	TYPE 1041327/3	PRINT 906492/5

NB: Page numbers refer to detailed discussion in DIALOG database chapter.

12,13

INSPEC

DIALOG INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

INSPEC (Information Services in Physics, Electrotechnology, Computers and Control) corresponds to the three *Science Abstracts* printed publications: *Electrical and Electronics Abstracts, Computer and Control Abstracts,* and *Physics Abstracts.* The *Science Abstracts* family of abstract journals, indexes, and title bulletins commenced publication in 1898. Today it forms the largest English-language database in the fields of physics, electrical engineering, electronics, computers, and control engineering. Non-English language source material is also included, but abstracted and indexed in English. INSPEC, File 13, is the current file which includes records from 1978 to the present. File 12 is the backfile which includes records from 1969 to 1977.

Each record includes a summary abstract. Author abstracts are used when available.

SUBJECT COVERAGE

The principal subject areas are indicated by major headings below, used with the INSPEC files:

- Atomic and Molecular Physics
- Computer Programming and Applications
- Computer Systems and Equipment
- Condensed Matter: Electrical Magnetic, and Optical Properties
- Condensed Matter: Structure, Thermal, and Mechanical Properties
- Control Technology
- Electrical and Magnetic Devices
- Electromagnetics, Optics and Circuits
- Electronic Engineering
- Gases, Fluid Dynamics, and Plasmas
- General Topics
- Elementary Particle Physics
- Instruments and Measurement
- Interdisciplinary Subjects
- Information/Communication Science and Engineering
- Mathematics and Mathematical Physics
- Nuclear Physics
- Power Systems and Applications

SOURCES

Journal papers, conference proceedings, technical reports, books, patents, and university theses are abstracted and indexed for inclusion in the INSPEC database. The number of journals scanned regularly is approximately 2300; over 330 of these are abstracted completely.

DIALOG FILE DATA

	File 12	File 13
Inclusive Dates:	1969-1977	1978-present
Update Frequency:	Closed file	Monthly (approximately 15,000 records per month)
File Size:	1,126,133 records	407,720 records as of July 1980

ORIGIN

INSPEC is produced by the Information Division of the Institution of Electrical Engineers (IEE). Questions concerning file content should be directed to either of the following offices:

INSPEC Marketing Department
IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854
USA
Telephone: 201/981-0060

INSPEC Tape and Online Services
IEE
Station House, Nightingale Road
Hitchin Herts SG5 1RJ
England
Telephone: 0462 53331
Telex: 825962

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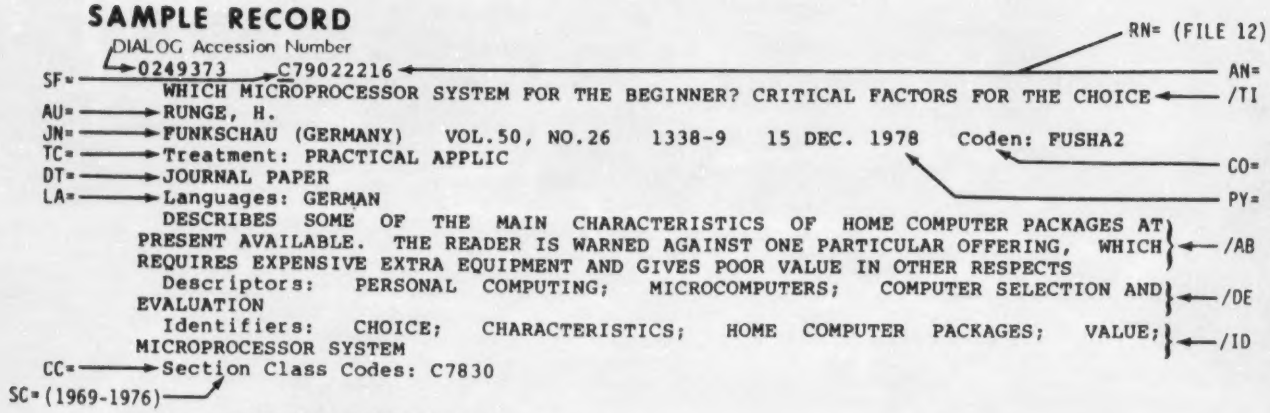
FILE 12,13

INSPEC

DIALOG FILES 12,13

SAMPLE RECORD



SEARCH OPTIONS

BASIC INDEX

PAGE	SUFFIX	FIELD NAME	EXAMPLES
12-3	None	Basic Index (Includes Descriptor, Identifier, and Corporate Source in File 12; includes Abstract, Descriptor, Identifier, and Title in File 13)	E MICROPROCESSOR S POOR(W)VALUE
12-3	/AB	Abstract[1]	S HOME(W)COMPUTER/AB
12-4	/CS	Corporate Source[2]	S MINNESOTA(F)UNIV?/CS
12-4	/DE	Descriptor[3]	S PERSONAL(W)COMPUTING/DE
12-7	/ID	Identifier[4]	S CHOICE/ID
12-10	/TI	Title[1]	S MICROPROCESSOR(F)SYSTEM?/TI

[1]Abstract and title in File 13 only.
[2]Corporate source /CS in File 12 only. See CS= in File 13.
[3]Also /DF.
[4]Also /IF.

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
12-11	AN=	Abstract Number[5,6]	E AN=A77087732	S AN=C79022216
12-12	AU=	Author	E AU=AAGAARD	S AU=RUNGE, H?
12-12	BN=	International Standard Book Number (ISBN)[5]	E BN=0 9505171	S BN=0 08 021031 7
12-12	CC=	Class Code[5,7]	E CC=A9260G	S CC=C7830
12-13	CL=	Conference Location[5]	E CL=BUCHAREST	S CL=PALO(W)CL=ALTO
12-14	CN=	Contract Number[8]	E CN=N00123	S CN=NAS3-20397
12-14	CO=	CODEN	E CO=MERUAZ	S CO=FUSHA2
12-14	CS=	Corporate Source[2,5]	E CS=AGARD	S CS=MCCLELLAN?
12-16	CY=	Conference Year[5]	E CY=197	S CY=1979
12-16	DT=	Document Type[5]	E DT=BOOK CHAPTER	S DT=JOURNAL PAPER
12-16	JN=	Journal Name	E JN=ACOUSTICS	S JN=ACTA(W)JN=ASTRON?
12-19	LA=	Language	E LA=DUTCH	S LA=GERMAN
12-20	PA=	Patent Assignee[8,9]	E PA=SAGE	S PA=A. B. DICK?
12-21	PI=	Patent Country[8,9]	E PI=UK	S PI=USA
12-21	PN=	Patent Number[8,9]	E PN=30	S PN=3521524
12-21	PO=	Patent Appl. Country[8,9]	E PO=HOLLAND	S PO=UK
12-22	PY=	Publication Year[5]	E PY=1977	S PY=1978
12-22	RN=	Report Number[8]	E RN=AGARD	S RN=AD-168654
12-22	SC=	Section Code[7,8]	E SC=A9210	S SC=A4636
12-22	SF=	Subfile[5]	E SF=A	S SF=C
12-23	TC=	Treatment Code[10]	E TC=A	S TC=APPLIC?
12-23	UD=	Update	E UD=8014	S UD=9999

[5]File 13 only.
[6]For abstract numbers in File 12, see RN=.
[7]Class codes CC= used 1977+; SC= used 1969-1976.
[8]File 12 only.
[9]Patents discontinued Dec. 1976.
[10]Used from 1977 forward.

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLES
12-24	None	DIALOG Accession Number	LIMIT 6/038241-999999
12-25	/ENG	English Language[5]	LIMIT 1/ENG
12-25	/FRN	Non-English Language[5]	LIMIT 3/FRN
12-25	/ART	Article[5]	LIMIT 5/ART
12-25	/NAR	Non-Article[5]	LIMIT 6/NAR

FORMAT OPTIONS

PAGE	NUMBER	RECORD CONTENT	NUMBER	RECORD CONTENT
12-36	Format 1	DIALOG Accession Number	Format 5	Full Record
	Format 2	Full Record except Abstract	Format 6	Title and INSPEC Abstract Number
	Format 3	Bibliographic Citation	Format 7	Bibliographic Citation and Abstract
	Format 4	Abstract and Title	Format 8	Title and Indexing

DIRECT RECORD ACCESS

PAGE	PREFIX	FIELD NAME	EXAMPLES
12-38	None	DIALOG Accession Number	TYPE 408329/8 | PRINT 394972/5

NB: Page numbers refer to detailed discussion in DIALOG database chapter.

SCISEARCH®

DIALOG INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

SCISEARCH is a multidisciplinary index to the literature of science and technology prepared by the Institute for Scientific Information® (ISI®). It contains all the records published in *Science Citation Index (SCI)*® and additional records from the *Current Contents* series of publications that are not included in the printed version of SCI. SCISEARCH is distinguished by two important and unique characteristics. First, journals indexed are carefully selected on the basis of several criteria, including citation analysis, resulting in the inclusion of 90 percent of the world's significant scientific and technical literature. Second, citation indexing is provided, which allows retrieval of newly published articles through the subject relationships established by an author's reference to prior articles. File 94 is the backfile containing records from 1974 through 1977; File 34 includes records from 1978 to the present.

SUBJECT COVERAGE

Subjects include the following areas:

- Acoustics
- Aeronautics
- Agriculture
- Astrophysics
- Behavioral Sciences
- Biochemistry
- Biology
- Biophysics
- Botany
- Cardiology
- Chemistry
- Dermatology
- Electronics
- Engineering
- Environmental Science
- Geology
- Mathematics
- Medicine
- Microbiology
- Pharmacology
- Physics
- Physiology
- Psychiatry
- Psychology
- Surgery
- Virology
- Zoology

SOURCES

The ISI staff indexes all significant items (articles, reports of meetings, letters, editorials, correction notices, etc.) from about 2,600 major scientific and technical journals. In addition, the SCISEARCH file for 1974-75 includes approximately 38,000 items from *Current Contents—Clinical Practice*. Beginning January 1, 1976, all items from *Current Contents—Engineering, Technology, and Applied Sciences and Current Contents—Agriculture, Biology, and Environmental Sciences* are included. Nearly 1,400 multi-authored books are also included per year.

DIALOG FILE DATA

	File 94	File 34
Inclusive Dates:	1974-1977	January 1978 to the present
Update Frequency:	Closed file	Semi-monthly (about 21,000 records per update)
File Size:	1,750,000 records	More than 1,120,000 records as of March 1980

ORIGIN

SCISEARCH is produced by the Institute for Scientific Information. Questions concerning file content should be directed to:

Diane J. Hoffman, Manager
User Education and Research
Institute for Scientific Information
University City Science Center
3501 Market Street
Philadelphia, PA 19104

Telephone: 800/523-1850 toll-free
215/386-0100 collect in Pennsylvania
TELEX: 84-5305
Cable: SCINFO

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(Revised June 1980) 34-1

SCISEARCH
DIALOG FILES 34, 94

SAMPLE RECORD

DIALOG Accession Number → 0912045 ARTICLE OATS ORDER#: HD806 ← OATS Order Number; 8 REFS ← Number of References Cited by Author

DT= NUCLEAR-POWERED COMMUNICATIONS SATELLITE FOR THE 1980S /TI (ENGLISH) LA=

AU= KAPLAN MH; CWYNAR DJ; BEDNARZ J

(File 34) CS= PENN STATE UNIV/UNIVERSITY PK//PA/16802 /CS (File 94)

JO=,JN= JOURNAL OF SPACECRAFT AND ROCKETS , V16, N4, P268-272, 1979 PY=

SEARCH OPTIONS

BASIC INDEX

PAGE	SUFFIX	FIELD NAME	EXAMPLES	
34-3	None	Basic Index (Includes Corporate Source and Title)	E SATELLITE S COMMUNICATIONS	S NUCLEAR
34-3	/CS	Corporate Source[1]	S PENN?(W)STATE/CS	
34-3	/TI	Title	S NUCLEAR(W)POWER?/TI	

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
34-4	AU=	Author	E AU=KAPLAN M	S AU=CWYNAR D?
34-6	CR=	Cited Reference	E CR=BLATZ P	S CR=BLATZ PE, 1965?
34-9	CS=	Corporate Source[2]	E CS=AEROSPACE	S CS=PENN(W)CS=STATE
34-10	DT=	Document Type	E DT=BOOK REV	S DT=ARTICLE?
34-10	JN=	Journal Name[2]	E JN=IEEE	S JN=JOURNAL OF SPACECRAFT?
34-10	JO=	Journal Name[1]	E JO=ANALYTICAL	S JO=SCIENTIFIC AMER?
34-11	LA=	Language[1]	E LA=GE	S LA=FR
34-11	LA=	Language[2]	E LA=GERMAN	S LA=FRENCH
34-12	PY=	Publication Year[2]	E PY=1979	S PY=1980
34-12	UD=	Update	E UD=7601	S UD=9999

[1]File 94 only.
[2]File 34 only.

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLES
34-13	None	DIALOG Accession Number	LIMIT 5/0550133-0669809
34-14	/ART	Articles	LIMIT 2/ART
34-14	/NAR	Non-Articles	LIMIT 2/NAR
34-14	/ENG	English Language	LIMIT 9/ENG
34-14	/FRN	Non-English Language	LIMIT 4/FRN

FORMAT OPTIONS

PAGE	NUMBER	RECORD CONTENT
34-22	Format 1	DIALOG Accession Number
	Format 2 or 5	Full Record
	Format 3	Bibliographic Citation
	Format 6	Title and OATS Order Number

DIRECT RECORD ACCESS

PAGE	PREFIX	FIELD NAME	EXAMPLES	
34-22	None	DIALOG Accession Number	TYPE 0584003/6	PRINT 0912045/5

NB: Page numbers refer to detailed discussion in DIALOG database chapter.

COMPREHENSIVE DISSERTATION INDEX

DIALOG INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

COMPREHENSIVE DISSERTATION INDEX is a definitive subject, title, and author guide to virtually every American dissertation accepted at an accredited institution since 1861, when academic doctoral degrees were first granted in the United States. Approximately 99% of all American dissertations are cited in this file. Masters theses have been selectively indexed since 1962. In addition, the database serves to disseminate citations for thousands of Canadian dissertations and an increasing number of papers accepted in institutions abroad. Professional (e.g., M.D., LL.D.) and honorary degrees are not included.

SUBJECT COVERAGE

All subject areas are covered, including the following:

- Mathematics and Statistics
- Fine Arts and Music
- Library and Information Science
- Psychology and Sociology
- Business and Economics
- Geography and Regional Planning
- History and Political Science
- Language and Literature
- Philosophy and Religion
- Agriculture
- Astronomy
- Biological and Environmental Sciences
- Chemistry
- Health Sciences
- Engineering
- Geology
- Physics
- Education

SOURCES

Individual, degree-granting institutions submit copies of dissertations and theses or lists of dissertations and theses completed to University Microfilms International (UMI). Citations for these dissertations are included in the database and in University Microfilms International printed publications: *Dissertation Abstracts International* (DAI), *American Doctoral Dissertations* (ADD), *Comprehensive Dissertation Index* (CDI), and *Masters Abstracts* (MAI). A list of cooperating institutions can be found in the preface to any volume of *Comprehensive Dissertation Index* or *Masters Abstracts*.

DIALOG FILE DATA

Inclusive Dates:	1861 to the present
Update Frequency:	Monthly (approximately 3,500 records per month)
File Size:	Over 700,000 records as of July 1980

ORIGIN

COMPREHENSIVE DISSERTATION INDEX is produced by University Microfilms International. Questions concerning file content should be directed to:

Ms. Phyllis R. Robb
Manager, Database Services
Dissertation Publishing, UMI
300 North Zeeb Road
Ann Arbor, MI 48106

Telephone: 800/521-0600 (toll-free except Michigan)
313/761-4700 (within Michigan)

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DIALOG FILE 35

SAMPLE RECORD

DIALOG Accession Number
UMI Order Number

202804 ORDER NO: AAD78-24511
TEMPORAL INTEGRATION AND FORWARD MASKING IN AUDITORY INFORMATION PROCESSING. /TI
DG= 170 PAGES. PY=
AU= FREDA, JON SCOTT (PH.D. 1979 STATE UNIVERSITY OF NEW YORK AT BINGHAMTON). CS=
PAGE 3553 IN VOLUME 39/07-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
PSYCHOLOGY, EXPERIMENTAL /DE
DC= DESCRIPTOR CODES: 0623
IC= INSTITUTION CODE: 0792

SEARCH OPTIONS

BASIC INDEX

PAGE	SUFFIX	FIELD NAME	EXAMPLES
35-3	None	Basic Index (Includes Descriptor and Title)	E TEMPORAL S INTEGRATION
35-3	/DE	Descriptor[1]	S EXPERIMENTAL(F)PSYCHOLOGY/DE
35-6	/TI	Title	S AUDITORY(1W)PROCESS?/TI

[1]Also /DF.

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
35-7	AU=	Author	E AU=FRIEDMAN, L	S AU=FREDA, JON SCOTT
35-8	CS=	Corporate Source	E CS=CALIFORNIA	S CS=BINGHAMTON(F)CS=STATE
35-10	DC=	Descriptor Code	E DC=0591	S DC=0623
35-10	DG=	Degree	E DG=M.A.	S DG=PH.D.
35-11	IC=	Institution Code	E IC=0382	S IC=0792
35-11	PY=	Publication Year	E PY=1897	S PY=1979
35-12	UD=	Update	E UD=8007	S UD=9999

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLES
35-12	/DOC	Doctoral Dissertations	LIMIT 5/DOC
35-12	/MAS	Masters Theses	LIMIT 3/MAS
35-12	/AVAIL	Available from UMI	LIMIT 1/AVAIL
35-12	/UNAVAIL	Not Available from UMI	LIMIT 12/UNAVAIL

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35-20	Format 1	DIALOG Accession Number
	Format 2 or 5	Full Record
	Format 3	Bibliographic Citation
	Format 6	Title, DIALOG Accession Number, and UMI Order Number
	Format 8	Title and Indexing

DIRECT RECORD ACCESS

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DIALOG FILE 77

SAMPLE RECORD

DIALOG Accession Number
JA= 78047350 V6N6
Characterization of severity of valvular heart disease by Doppler monitoring } /TI
AU= of brachial artery flow parameters
Abrams, S.G.
CS= Univ Of Ill Med Cntr, Chicago, IL.
CT= Association for the Advancement of Medical Instrumentation Thirteenth Annual CL=
Meeting & Exhibit 781 2032 Washington, D.C. 29 Mar-1 Apr 78 CY=
MN= Association for the Advancement of Medical Instrumentation
SP= Abstracts (Eng) free at meeting; after meeting in "Proceedings AAMI 13th Ann Mtg," 1 Mar 78, $12.00 members and $15.00 non-members: AAMI, 1901 N. Ft. Meyer Dr., Suite 602, Arlington, VA 22209.
Descriptors: VALVE; HEART; DISEASE; DOPPLER; MONITOR; BRACHIAL; ARTERY; FLOW; PARAMETRY } /DE
SECTION HEADING: EXPERIMENTAL MEDICINE /SH
SC= Section Class Codes: 4500

SEARCH OPTIONS

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PAGE	SUFFIX	FIELD NAME	EXAMPLES
77-3	None	Basic Index (includes the three suffix-coded fields below)	E ARTERY S BRACHIAL S HEART(F)DISEASE
77-3	/DE[1]	Descriptor	S HEART/DE
77-4	/SH	Section Heading	S EXPERIMENTAL MEDICINE/SH
77-5	/TI	Title	S VALVULAR(F)FLOW/TI

[1]Also /DF

ADDITIONAL INDEXES

PAGE	PREFIX	FIELD NAME	EXAMPLES	
77-7	AU=	Author	E AU=DACOSTA, G	S AU=ABRAMS, S?
77-7	CL=	Conference Location	E CL=WASHINGTON	S CL=CHICAGO
77-8	CS=	Corporate Source	E CS=ILLINOIS	S CS=UNIV(F)CS=ILL
77-9	CT=	Conference Title	E CT=MEDICAL	S CT=SOCIETY OF TOXICOL?
77-10	CY=	Conference Year	E CY=1978	S CY=1978
77-11	JA=	Journal Announcement	E JA=V6N2	S JA=V6N6
77-11	MN=	Meeting Number	E MN=781 1014	S MN=782 2047
77-12	SC=	Section Code	E SC=7500	S SC=4500
77-12	SP=	Sponsor	E SP=ALLERGY	S SP=MEDICAL(W)SP=INSTRUMENTATION
77-13	UD=	Update	E UD=7806	S UD=9999

LIMITING

PAGE	SUFFIX	FIELD NAME	EXAMPLE
77-13	None	DIALOG Accession Number	LIMIT 2/78000001-78999999

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PAGE	PREFIX	FIELD NAME	EXAMPLES	
77-21	None	DIALOG Accession Number	TYPE 78047350/5	PRINT 7804994/5

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